

The PRESIDING OFFICER. Without objection, it is so ordered.

The Senator from Nevada.

Mr. REID. Before the majority leader goes to the next item, it is going to be extremely difficult to finish this most important bill tomorrow. Senator WYDEN has worked so hard on this with others. Senator BOXER, Senator FEINSTEIN, a number of other people on our side of the aisle have worked very hard. We are going to send out a hotline in the morning to find out what amendments are around. We already have some knowledge of the amendments, but it is going to take a lot of cooperation and a lot of people cutting down speeches tomorrow if we are going to finish this bill tomorrow night, which is the desire of the two leaders.

The PRESIDING OFFICER. The Senator from Kentucky.

UNANIMOUS CONSENT AGREEMENT—H.R. 2800

Mr. MCCONNELL. Mr. President, I am pleased to announce to our colleagues and obviously the leader that we have reached an agreement that will allow us to wrap up the foreign operations bill in relatively short order in the next day or two. I am about to propound a unanimous consent agreement that has been agreed to by the other side.

I ask unanimous consent that the only first-degree amendments remaining in order to the Foreign Operations bill be the following, and that they be subject to second-degrees which are relevant to the first: DeWine No. 1966; Feinstein No. 1977; McConnell No. 1970; one McConnell technical, and two McConnell relevant; a Frist relevant; Allard-Feingold-Leahy, Indonesia; Durbin on AIDS; Bingaman on AIDS; two Leahy relevant; Daschle relevant; McConnell-Leahy cleared managers' amendment.

I further ask unanimous consent that following the disposition of the above listed amendments, the bill be read a third time and the Senate proceed to a vote on passage of the bill with no intervening action or debate. Further, I ask unanimous consent that following passage of the bill, the Senate insist on its amendments, request a conference with the House, and the Chair be authorized to appoint conferees on the part of the Senate, which will consist of the subcommittee plus Senator STEVENS and Senator BYRD.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. MCCONNELL. I yield the floor.

CLIMATE STEWARDSHIP ACT OF 2003

The PRESIDING OFFICER. Under the previous order, the Committee on Environment and Public Works is discharged from further consideration of S. 139, which the clerk will report.

The legislative clerk read as follows:

A bill (S. 139) to provide for a program of scientific research on abrupt bankrupt cli-

mate change, to accelerate the reduction of greenhouse gas emissions in the United States by establishing a market-driven system of greenhouse gas tradeable allowances that could be used interchangeably with passenger vehicle fuel economy standard credits, to limit greenhouse gas emissions in the United States and reduce dependence upon foreign oil, and ensure benefits to consumers from the trading in such allowances.

Thereupon, the Senate proceeded to consider the bill.

The PRESIDING OFFICER. The Senator from Oklahoma.

Mr. INHOFE. Mr. President, it is my understanding there are 3 hours tonight equally divided, which would be an hour and a half for each side. Because of something that happened today in Colorado, I yield up to 7 minutes of our time to the Senator from Colorado, Mr. ALLARD.

The PRESIDING OFFICER. The Senator from Colorado.

FIRES IN COLORADO

Mr. ALLARD. Mr. President, I thank the Senator from Oklahoma for yielding.

Today in Colorado we had two fires erupt in the State. One was a grassland fire that probably won't amount to much. The other is a very serious fire that happened north and west of Boulder and Jamestown. We have a school that has been evacuated; 300 people have been evacuated. There is an educational camp in the area that has been evacuated. The reason I bring this to the attention of the Senate at this particular point in time is because Colorado is one of those areas in the western part of the United States where we have a forest/urban interface. That is what the Forest Health Restoration Act is all about, trying to provide a program where we can begin to apply the principles of forest health.

Along the Front Range of Colorado, running all the way from Colorado Springs all the way up into Fort Collins, including Boulder, where this fire has broken out, there are a lot of homes being built into the forest. Of course, if you don't practice good forest health, then they become vulnerable to fires that could erupt.

The significant thing about what is happening today is this is not the fire season for Colorado. The fire season occurs in September, perhaps the first part of September, August, and July. Here we are, just 3 days from the first of November, and we have a fire that is breaking out with serious consequences in Colorado.

This again points out the need for us to move forward with this particular piece of legislation. We need to be addressing this problem immediately in areas such as what we are seeing here in the State of Colorado.

Last year during the peak of the Hayman Fire, the Front Range of the Rocky Mountains was covered in a thick blanket of smoke and ash that blocked visibility and dropped ash on surrounding towns and cities, creating a winter-like scene in the midst of a Colorado June. The Hayman Fire was

the largest in Colorado history and cost \$40 million and counting. It burned a little over 137,000 acres, destroyed 133 homes, and 466 outbuildings. The fire burned for 30 days. The Colorado State Forest Service has advised that it will take up to 150 years for the forest itself to be reestablished.

Some people ask, Why does it take so long? We are in a semi-arid area. Vegetation does not grow back rapidly. During the Hayman Fire, 142 subdivisions were evacuated along with 85,000 people.

Wildfires present a major cause of pollution, triggering severe asthma-related breathing problems and commonly causing death. Wildfires are also a major source of pollution. If we take 1 day out of the Hayman Fire, on June 10, 2002, the CO₂ gas emissions from the Hayman Fire surpassed the CO₂ emissions from all passenger cars operating in the United States on that same day. So this problem with a lot of undergrowth in the forests and trees being infested with beetles and a lot of dead and dying timber has made our forests extremely vulnerable in the forest/urban interface area.

Federal land management procedures are very complex. They should not be so complex that they prevent timely action to address ecological crises on public lands. Forest Service officials have estimated that planning an assessment consumes 40 percent of their time at the national forest level, costing more than \$250 million per year. Although much of this work is important, the officials estimate that improving administrative procedures may allow agencies to redirect up to \$100 million a year from unnecessary planning to actual forest health restoration where it will improve the ecosystem and protect local communities from catastrophic fires which we see erupting today in Boulder County.

The Front Range in Colorado also depends on the mountains to provide drinking water and water for gardens and children. But devastating fires threaten and destroy watersheds that yield this water. Catastrophic blazes consume organic matter in the littler layer of the soil and create a hard pan surface that impedes water penetration.

When water flows over this hydrophobic layer, it carries debris, mud, and causes soil loss, clogging municipal water treatment facilities, affecting water quality, flavoring water with ash, and costing millions to rehabilitate. This is the problem we face today from the Hayman Fire which occurred just a year ago.

In 2002, there were over 88,000 fires that burned 7 million acres. Thousands of structures were burned: 835 primary residences, 46 commercial buildings, and 1,500 outbuildings. The 2002 estimated suppression costs hover somewhere around \$1.6 billion. These unnaturally extreme fires are just one consequence of deteriorating forests and range health that now affects more

than 190 million acres of public land, an area twice the size of California.

Wildfires destroyed wildlife and crippled watersheds. The Hayman fire occurred in the Cheesman Reservoir area, a primary source of drinking water for the city of Denver. Costs of the Cheesman reclamation have totaled nearly \$5.5 million, with the U.S. Natural Resources Conservation Service and the EPA reimbursing Denver Water approximately \$2.8 million of that amount.

During the Buffalo Creek fire, 600,000 cubic yards of sediment went into Denver Water's Strontia Springs Reservoir.

The fact is, there is too much paperwork and analysis and it is killing our forests. The Forest Service recently testified that it had to go through an 800-step decisionmaking process to complete the Upper South Platte restoration project, which took nearly 3 years to complete, and the fire that we see erupting today in northwest Boulder is in the Platte River drainage basin. Unfortunately, the bureaucratic process wasn't complete until a large wildfire ravaged the landscape set to be treated, plundering homes and an important watershed and forcing a number of endangered species to the edge of regional extinction.

The Healthy Forest Restoration Act is a comprehensive plan focused on giving Federal land managers and their stakeholders and partners the tools to respond to this growing forest health crisis. The legislation directs the timely implementation of scientifically supported management activities to protect the health and vibrancy of Federal forest ecosystems, as well as the communities and private lands that surround them.

This is why I ask Members of the Senate to join me in supporting the Forest Health Restoration Act.

I yield back my time.

The PRESIDING OFFICER. Who yields time?

AMENDMENT NO. 2028

Mr. LIEBERMAN. Mr. President, I have an amendment on behalf of the Senator from Arizona, Mr. MCCAIN, myself, and several other Senators, which I send to the desk at this time.

The PRESIDING OFFICER. The clerk will report.

The legislative clerk read as follows:

The Senator from Connecticut [Mr. LIEBERMAN], for himself, Mr. MCCAIN, Ms. SNOWE, Mrs. FEINSTEIN, Mr. CHAFEE, Mr. DURBIN, Mr. AKAKA, Mrs. MURRAY, Mr. LAUTENBERG, Mr. EDWARDS, Mr. BIDEN, Mr. CARPER, Mr. NELSON of Florida, Mr. CORZINE, and Ms. CANTWELL, proposes an amendment numbered 2028.

Mr. LIEBERMAN. Mr. President, I ask unanimous consent that further reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

(The amendment is printed in today's RECORD under "Text of Amendments.")

Mr. LIEBERMAN. Mr. President, I am very proud to speak on behalf of

this amendment, which I am delighted to cosponsor with my good friend and colleague from Arizona, Senator MCCAIN. We have worked on this for a long time. We have worked on it with environmentalists, leaders in the business community, thinkers about this problem, and public health officials, and with just plain citizens who are worried about global warming.

Global warming is one of the great challenges of our time. It challenges us in many ways. Greenhouse gas emissions from the burning of fossil fuels threaten our environment, of course, but they also threaten our economy and our public health. They also represent a challenge to political leadership, which is whether we are going to be prepared to look at the science, to face the facts, and to do something about a problem that is appearing but its most difficult, and potentially devastating, consequences are yet over the horizon. Should we continue to allow unabated our current rate of greenhouse gas pollution, we threaten to disrupt the delicate ecological balance on which our lives and our livelihoods depend.

Global warming is not just a global challenge; it is also a very local one, impacting lives of Americans in critical and potentially disastrous ways. Every family has reason to fear the effects of global warming. Scientists predict that rising temperatures and rising sea levels through global warming will lead to damaged water supplies, increased flooding, depleted fisheries, sunken wetlands, devastating droughts, intensified forest fires.

The parched conditions that are contributing to the ravaging fires raging now in southern California could become more widespread if the Earth's temperature increases. Over the long term, in a much more personal way, global warming will spell higher energy bills, increased insurance premiums, and lost jobs.

I know that over the course of the debate this evening and tomorrow several of our colleagues will speak to the local physical and biological impacts of global warming. I want to tell one story that I heard about a year ago, which made this all real to me. It comes from the Native American population of Alaska and northern Canada.

In the past few years, a robin appeared in one of the Native American villages in Alaska. The elders there, despite a very intimate awareness of their 10,000-year-old language, did not know what to call the bird. There is no word for robin in their language. Robins, by virtue of the climate of that area, for thousands of years preceding, felt—if I can put it this way—unwelcome there.

The second example comes from Tanana in Alaska, which has an annual lottery to determine when a tripod placed on the frozen Tanana River would break through the ice. Over the past 50 years, the breakthrough has continued to occur earlier and earlier.

So it is not only in the language of science and statistics that climate change and global warming is occurring, it is in the language of everyday life.

The American public clearly understands this and, in fact, there is a gap between the public and our political leadership that Senator MCCAIN and I hope we can close with this amendment. According to a recent Zogby poll, 75 percent of Americans support this legislation, this amendment, we are debating this evening.

My colleagues now have to choose between meeting the public's support for action, demand for action, or siding with the minority who would ignore the scientific consensus and delay action on this critical problem.

Meeting this monumental challenge and addressing this growing environmental threat demands strong leadership. I am afraid that, to date, such leadership has been lacking in the current administration. Today's Senate debate represents the first of its kind since 1998, which testifies, I am afraid, to a lack of leadership here. This debate provides us with an excellent opportunity to take action before it costs us so much more to deal with the consequences of inaction.

I must say that even more dramatic has been the Bush administration's failure of responsible leadership on global warming. President Bush and his Environmental Protection Agency have not only offered no meaningful proposals to deal with global warming, they have tried to deny the very existence of the problem.

Last summer the White House called for yet another study. This time it focused on whether global warming is caused by human behavior. Let me speak directly. That call is a shameful stalling tactic. As the New Orleans Times-Picayune described, "It calls for further investigation of what the scientific community already widely accepts." In fact, as Don Kennedy, chief editor of the International Journal of Science, argued:

Consensus as strong as the one that has developed around this topic [climate change] is rare in science. . . . There is little room for doubt about the seriousness of the problem the world faces, and other nations, including most of our trading partners in the Organization for Economic Cooperation and Development, understand that.

Yet in the face of these facts, President Bush has given us only a call to action, a call for more study and not action on global warming. I cannot resist saying this President has fiddled while the globe continues to warm.

The plan the administration has put out would allow emissions of global warming pollutants to continue to grow at exactly the same alarming rate as they have grown over the past decade. Earlier this month, the General Accounting Office found that the plan of the administration would do nothing to reduce our emissions growth. In fact, the GAO was even unable to discern the extent to which the administration's identified methods and tools

would contribute to reducing emissions. They found that the administration was not going to evaluate whether they had made progress toward their goals until 2012. Too late.

This deny-and-delay approach to meeting the real threat of global warming is no longer acceptable. It is an abdication of leadership—environmental leadership, public health leadership, economic leadership, international diplomatic leadership.

Senator McCain and I offer our bill, the Climate Stewardship Act, to confront this growing threat in a systematic and serious way. It is patterned after the highly successful market-based acid rain program of the Clean Air Act.

The amendment was crafted in close consultation with industry leaders and, I am so pleased to say, enjoys strong support of many of them and leaders within the environmental community. It represents the most serious and balanced attempt at solving the crisis before us, and it does so by harnessing market forces and directing them to new economic opportunities in the future.

Our bill limits emissions of global warming pollutants by electric utilities, major industrial and commercial entities, and refiners of transportation fuels. Those sectors represent about 85 percent of U.S. emissions of global warming pollutants.

The amendment does not apply to farmers, individual residences, or to automobile manufacturers for the cars they sell. Because our current emissions are now at 2000 levels from a practical standpoint, our legislation simply holds them at those current levels in some ways, a modest goal—but a very significant step forward in American responsibility for the global problem of global warming.

That is the full extent of national action that our amendment would require. More modest, yes, than the cuts envisioned by the Kyoto protocol, but a significant step forward, one that I think will not only get us on the road to protecting the public's health and the great environmental treasures of the United States of America but will reestablish our credibility and responsibility in the world. As the largest emitter of greenhouse gases, we will show that we are accepting our responsibility to be part of the global solution to this global problem.

Our amendment achieves these significant reductions while embracing free market principles. By setting reasonable caps on emissions and permitting industry to trade in pollution allowance, we create a new market for reducing greenhouse gases. In this way, we hope and believe our amendment will change the fundamental terms of the debate because for too long the national dialog on global warming has seemed to be deadlocked, pitting business leaders on one side against environmentalists on the other in a zero sum struggle. It ought not to be. We

ought to find common ground, and that is what this amendment attempts to do.

The debate for too long has itself been overheated with acrimony and polluted with misinformation. Our hope is that this amendment will break through both of those obstacles. Environmental protection and economic growth are not mutually exclusive; they are mutually reinforcing over the long run.

Measured steps to curb global warming in a business-friendly way promise to not only save us from environmental degradation but to open new opportunities and to spur innovative new technologies for American business to seize.

In a July 25 letter this year, the Business Council for Sustainable Energy endorsed the concept that market-based climate policies can reduce gas emissions while promoting technology-based solutions, reduce energy dependence, and bolster the competitiveness of U.S. industry.

In a July 18 letter to my office, a group called Environmental Entrepreneurs, which represents over \$20 billion in investment capital, wrote that the bill will stimulate economic growth and give the United States a competitive edge in bringing these products to market.

Finally, a letter of July 24 of this year from several of our Nation's most prominent investors encouraging the efforts Senator McCain, the other co-sponsors, and I are making says:

By employing strict goals and flexible means, we expect your proposal will unleash the power of competition and spur innovation to protect the environment. A healthy economy and a healthy environment are not mutually exclusive; they go hand in hand.

I ask unanimous consent that all three of those letters be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

THE BUSINESS COUNCIL FOR
SUSTAINABLE ENERGY,
Washington, DC, July 25, 2003.

DEAR SENATOR: As the Senate prepares to consider several global warming amendments that may be offered to the Energy Policy Act (S. 14), the Business Council for Sustainable Energy would like to offer another industry perspective.

Some information has been circulated recently claiming that any substantive program to reduce greenhouse gas emissions in the U.S. would cause widespread harm to our economy. The analysis that is being circulated does not reflect any of the proposals that are pending before Congress. Instead, it is based on a widely criticized analysis by the Wharton Econometrics Forecasting Associates (WEFA) that was conducted five years ago.

The WEFA analysis is a disservice not only to Senators who need relevant information to make policy decisions, but also to industry coalitions like ours that recognize the value of responsible and responsive policy design.

Senators McCain and Lieberman have developed legislation (S. 139) that underscores the value of flexible emissions trading pro-

grams that maximize innovation and minimize costs.

The analysis being circulated in no way reflects the approach proposed by S. 139. Key differences include:

Moderate emission reduction targets with greater lead time to industry. S. 139 reduces U.S. emissions to 1990 levels by 2016, which equates to about a one percent emissions reduction annually over the next 13 years—a more modest reduction occurring over a longer period of time.

Flexible emissions trading. The McCain-Lieberman bill utilizes market-based mechanisms within a cap-and-trade program that encourages innovation through the use of efficient, cost-effective emissions reduction strategies. The WEFA analysis assumes that a carbon tax is imposed on industry.

Trading of non-CO₂ gases. The McCain-Lieberman bill incorporates reductions in other greenhouse gas (beyond CO₂) in the trading program, a design feature that has been shown to significantly reduce the cost of compliance. The WEFA analysis was limited to carbon dioxide.

Credits to farmers for carbon sequestration. The McCain-Lieberman bill allows emitters to offset their emissions by sequestering carbon through land use practices. The WEFA analysis fails to account for these inexpensive offsets.

Credits for international projects. The McCain-Lieberman bill allows companies to meet a portion of their obligation through global emission reduction projects. The WEFA analysis once again ignores this opportunity.

The model used by WEFA five years ago was based on assumptions that U.S. industry would fail to deliver more efficient and cleaner technologies over time in response to policy incentives. A market-based program such as that envisioned in S. 139 would provide incentives for industry to innovate, just as with the Clean Air Act's acid rain program, which pioneered the emissions trading approach and delivered environmental results as much as 90 percent less than economists had projected.

The Council does not stand alone in our belief that market-based climate policies such as emissions trading can benefit the economy. More than 2,500 economists, including eight Nobel laureates, issued a statement in 1997 that read in part:

"Economic studies have found that there are many potential policies to reduce greenhouse-gas emissions for which the total benefits outweigh the total costs. For the United States in particular, sound economic analysis shows that there are policy options that would slow climate change without harming American living standards, and these measures may in fact improve U.S. productivity in the longer run."

While the economists' statement is not an endorsement of any policy before Congress today, it speaks to the importance of a more thoughtful dialogue about what the nation should be doing.

Properly constructed, global warming policies that incorporate market mechanisms can reduce greenhouse gas emissions while promoting technology-based solutions, reduce energy dependence and bolster the competitiveness of U.S. industry.

With best wishes,

MICHAEL L. MARVIN,
President.

ENVIRONMENTAL ENTREPRENEURS,
San Francisco, CA, July 18, 2003.

Hon. JOSEPH LIEBERMAN,
U.S. Senate, Hart Senate Office Building,
Washington, DC.

Hon. JOHN MCCAIN,
U.S. Senate, Russell Senate Office Building,
Washington, DC.

DEAR SENATOR LIEBERMAN AND SENATOR MCCAIN: We are writing as members and supporters of Environmental Entrepreneurs (E2) in support of your proposal to create a binding, market-based program to limit global warming emission from U.S. industry. E2 is an organization of business and professional leaders who promote good environmental policy that supports economic growth. The economic risks that climate change poses to the U.S. economy are enormous, and E2 believes we must address this issue without further delay.

The first President Bush signed and the Senate ratified the Framework Convention on Climate Change (the "Rio Climate treaty") over a decade ago to provide for a worldwide program to manage the manmade emissions that contribute to global warming. Yet, in the time since we ratified the Rio Treaty, the United States, which produces more global warming emissions than any other nation, has not developed a serious program to respond to the threat that global climate change poses to the planet's environmental and economic health. As a result, U.S. emissions of global warming gases have grown steadily and now exceed 7 billion metric tons of CO₂ equivalent gases—a growth of 14% from 1990 levels.

Every year that passes increases the difficulty and cost of averting the threats of environmental and economic disruption posed by climate change. Without a national framework for addressing the issue of global warming, American businesses continue to make long-term capital investments that commit us to ever increasing greenhouse gas emissions. New buildings, transportation systems, and power and industrial plants are being designed and built today without regard for the need to reduce global warming emissions. The large capital outlays are committing us to a future of unacceptable risks to the American economy from global warming.

The threats to our economy from climate change may well include, in some areas, the vitality of American agriculture, the availability of water for consumption and irrigation, and the destruction of recreational resources such as ski resorts, coastal areas and wetlands. E2 considered these risks serious enough in California that we actively campaigned for the passage of the California Clean Cars Bill, or AB1493, which was signed into law last summer and is the first legislation in the country to regulate the amount of CO₂ emissions from passenger vehicles. We want to acknowledge your leadership in supporting this bill and helping Governor Davis to recognize the national, if not global, implication of this kind of policy. We are promoting similar legislation in the state of New York and hope that a groundswell for carbon emissions policy at the state level will convince the federal government of the need to provide national standards.

Your proposal, the "Climate Stewardship Act of 2003," recognizes what we, as business leaders, already know: the engine of American innovation depends on market-based incentives to guide capital investment. Your legislation would: create manageable targets to control the growth in global warming emissions from America's principal emitters and put us on a path to reducing emissions over time; ensure that the reductions occur in an efficient manner by letting businesses decide where to best achieve them; and

spawn new business sectors to create the enabling technologies to meet these goals.

The economic benefits inherent in addressing global warming reach far beyond avoiding the risks associated with inaction. The deployment of existing "climate friendly" technologies and the development of new ones will result in new markets and create new jobs. Buildings and appliances that waste less energy, transportation systems that meet our needs with reduced global warming emissions, and energy systems that make expanded renewable resources economically viable and offer ways to use fossil energy without releasing carbon dioxide—all these are key to our economic and environmental future. These advances will stimulate economic growth and give the U.S. the competitive edge in bringing these products to market.

The United States should be in the vanguard of this new global market for climate friendly technologies. Our businesses are second to none in developing advanced products when the market conditions reward these investments. A market in limiting global warming emissions is the policy step needed to promote innovation and growth in this sector. We look forward to working with you to implement this program at the earliest possible date.

Sincerely,

BOB EPSTEIN,
Co-Founder, E2.
NICOLE LEDERER,
Co-Founder, E2.

JULY 24, 2003.

Hon. JOSEPH LIEBERMAN,
Hon. JOHN MCCAIN,
U.S. Senate, Washington, DC.

DEAR SENATORS LIEBERMAN AND MCCAIN: As business leaders we recognize that the risks and complexities of climate change are so important that we must work together to meet this challenge. We understand that any response that is sufficient to avert dangerous climate change will be long term, but that the nature of the problem requires that action begin now. We understand that a constructive global or domestic response must be equitable and support economic growth based on free market principles. As business leaders, we know how government policies can help—or hurt—business and the economy. Good policies set clear goals and leave businesses free to decide how to meet those goals at lowest cost. The policies you have suggested be included in the Energy bill seem to be both serious in their environmental goals and prudent in using market forces to achieve them.

By employing strict goals and flexible means, we expect your proposal will unleash the power of competition and spur innovation to protect the environment. A healthy economy and a healthy environment are not mutually exclusive; they go hand in hand. American business has the ingenuity and know-how to solve the problem of global warming while continuing to prosper. Indeed, many of our colleagues already have stepped forward to pledge to reduce their companies' greenhouse gas emissions.

We recognize that there is still debate about the levels of greenhouse gas reductions necessary to stabilize the climate and protect the U.S. economy. Several things are clear. Reductions must begin promptly. Voluntary efforts alone won't do the job. And finally, any mandatory restrictions must employ market incentives. We congratulate you for recognizing these needs and for your efforts to see that the Senate addresses them.

Sincerely,

John Doerr; Jon Lovelace; Lewis S. Ranieri; Julian H. Robertson, Jr.; John H.T. Wilson.

Mr. LIEBERMAN. Mr. President, corporate America, fortunately, has already given us some models of companies that are dealing with global warming and, I believe, profiting from doing so. Companies such as Alcoa, British Petroleum, DuPont, Eastman Kodak, IBM, Intel, Johnson & Johnson, and Nike have all accepted targets for greenhouse gas pollution reduction that meet or exceed this amendment's requirements. These and other companies have cut their emissions of greenhouse gases not just because they sought to be good environmental citizens, which they are, but because their boards of directors and their senior management are convinced that a proactive stance on climate change makes good business sense.

Perhaps the most compelling examples of that new corporate mindset on global warming come from American Electric Power and Cinergy, the biggest burners of coal by tonnage and percentage in our country. Both companies have now announced enforceable obligations to reduce greenhouse gas emissions to levels that are below what our proposal requires. And Cinergy has said it can make these reductions for no increased cost and with no additional fuel switching.

It is quite remarkable that they say they can make the reductions at no increased cost. But for every BP and DuPont, IBM and Cinergy, there are scores of other enterprises that I fear are inefficient, that are refusing to rise to new environmental standards and curb their greenhouse gas emissions. That is why we must pass this amendment. We must set standards. We must exercise responsible leadership.

I understand that taking action to combat global warming is not without cost, but it is worth the cost. The sacrifice of the Climate Stewardship Act is a minimal sacrifice. The cost of our amendment is reasonable and affordable by any measure and under any economic model employed to date. A recent MIT study estimated that our amendment would annually cost less than \$20 per household. That is not a lot to ask for stemming the warming of the planet and all the devastating consequences it could bring.

A second independent study released this summer by the Tellus Institute reaffirms that same conclusion. Tellus, in fact, found that net savings to consumers of \$48 billion would be realized by 2020 and household electricity bills would decrease because of reduced energy demand.

Finally, the recent study of the Bush administration's Department of Energy of our entire proposal found similar minimal economic impacts overall, but did find some spikes in natural gas usage at the expense of the coal industry.

We feel very strongly that was a flawed study. Its assumptions only allowed compliance with the program through fuel switching. So the outcome

was preordained. In fact, the Pew Center for Global Climate Change has examined this analysis and believes the study's structure, combined with unrealistic input assumptions, results in unrealistically high cost projections.

Senator MCCAIN and I have worked very hard on this proposal. We have worked hard to achieve common ground on it, both among businesses and industries that are involved in emitting greenhouse gases, environmentalists, citizens, and among Members of the Senate. We are seeking a consensus position that will allow our Nation to move forward to take action on this critical challenge. As a result, we have modified our original bill to drop the second phase of its requirements.

As time goes on, we will look forward to bringing that back up and convincing the Senate to adopt the entire program, but let's deal with the first phase amendment. It does not require or create a significant fuel switching, even according to the administration's own Energy Information Agency, and has a very low economic impact. It is a beginning in dealing with this problem.

The true cost comparison is not between the cost of doing business now versus the cost of new regulations. It is between the cost of action now and the cost of inaction in the future, because the fact is the carbon we emit to the atmosphere today will remain there for a century. Every extra ton of emissions means we are going to need tighter controls. It will be more costly and more difficult to protect the environment and public health later on.

A recent study calculated every ton of pollutants needlessly emitted into our atmosphere costs Americans \$160, and we are currently emitting billions of tons each year. Property lost to rising sea levels, cropland lost to drought, revenue lost to dwindling fishing stocks caused by global warming, all represent real costs, not to mention the ultimately immeasurable damage to our health and quality of life.

It is very interesting to follow the judgments of the insurance industry on this question if we want to gauge the cost of inaction. Uncertain about the potential increased liability from severe weather events and other costly side effects of global warming, insurers are now charging higher premiums to businesses and homeowners to cover higher expected costs. SwissRe, North America's leading reinsurer, says that "global warming is a fact" which "has the potential to affect the number and severity of these natural disasters and result in a very significant impact on our business."

This reinsurance company projects that climate-change-driven natural disasters could cost global financial centers more than \$150 billion per year within the next 10 years. Just think of that. We are making a proposal that the MIT study says will cost every American family \$20 a year, compared to \$150 billion a year within 10 years globally.

Wall Street is also concerned about the future if we fail to act. A number of institutional investors recently joined with several utilities to call for the kind of market-based approach to global warming that is part of our amendment. There is also an opportunity for our American enterprise and innovation to produce the products that will respond to the global warming challenge, and in that sense to be ready to meet the global demand for such products.

According to one reputable estimate I have seen, over the next 20 years, \$10 trillion to \$20 trillion will be spent globally on new energy technologies. Our Asian and European competitors see this potential and, by complying with Kyoto protocol standards, are adapting their practices to seize that enormous international market.

I want to say a special word about farmers and ranchers under our plan. They will be able to make money by adopting pro-environment practices. That would include increasing carbon levels in their land and selling emission credits to polluters. Rough estimates show that new, more sustainable management practices will sequester approximately one-half ton of carbon per acre for a farmer with a 5,000-acre farm. This would represent thousands of additional dollars a year. Many of those practices are better for the long-term health of our farms but, of course, can be of great benefit to cash-strapped farmers.

Global warming is, of course, about more than the numbers about which I have talked. It is about our values. Do we take action to protect our children and grandchildren from having to bear the full cost and health risks and life changes from the pollution we are generating today or do we, as leaders of the world's largest emitter of greenhouse gases, duck our responsibility and let the next generation take it?

I am particularly pleased by the strong support Senator MCCAIN and I have received from a broad and diverse coalition of religious organizations that affirms the moral imperative for action now on global warming. I cite the National Religious Partnership for the Environment, representing an alliance of faith groups, including the United States Conference of Catholic Bishops, the National Council of Churches of Christ, the Coalition on the Environment and Jewish Life, and the Evangelical Environmental Network.

I am reminded of the words from Scripture that the Earth is the Lord's and the fullness thereof, which is surely the truth and reminds us we are only visitors. We do not own the Earth. We are blessed to live on it for some period of time. With that time comes a responsibility to be good stewards of the Earth. I always remember the words from the story of creation, Adam and Eve, where it says in the Bible they were put there to work and guard the garden. In a very direct sense, that re-

sponsibility to work, enjoy, and develop is combined with a responsibility that we have to guard the garden, guard the Earth.

We have failed in that responsibility. This amendment is an attempt to accept that responsibility and do something about it.

This is an historic debate. It is a debate I believe our children and grandchildren and perhaps historians will look back on and ask, as the votes are counted, did the Senate of the United States rise to a challenge almost everyone sees is coming or did we wait until the consequences, the effects of global warming, were so serious that it was too late? It was certainly too late to deal with those consequences without drastic effects on our environment, on our health, on our economy, and on the way we live.

Mr. MCCAIN. Will the Senator yield for a question?

Mr. LIEBERMAN. I would yield.

Mr. MCCAIN. Is the Senator aware the major attack on this legislation will be related to the validity of the entire issue of climate change?

Mr. LIEBERMAN. I expect that will be true.

Mr. MCCAIN. Will the Senator yield for a further question?

Mr. LIEBERMAN. I will.

Mr. MCCAIN. Is he aware there is widespread agreement on the occurrence of global warming and the human source of the observed and predicted changes? To make a long story short, there was a study conducted in 2001 by the Intergovernmental Panel on Climate Change. A third assessment report represented a collaborative, scientific endeavor involving 700 scientists worldwide, peer-reviewed by another 700 scientists. The Bush administration requested an independent review of the IPCC report by the National Academy of Sciences. Now everybody can shop around for their expert. This is the National Academy of Sciences. The resulting 2001 national research report, which is delegated by the National Academy of Sciences, said the following in their summary, and I will ask my colleague just to comment on this. We need to keep coming back to this and coming back to this and coming back to this during this debate. Again, the National Research Council, an arm of the National Academy of Sciences of the United States of America, says greenhouse gases are accumulating in the Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise.

Temperatures are, in fact, rising. The changes observed over the last several decades are likely mostly due to human activities, but we cannot rule out that a significant part of these changes is also a reflection of natural variability.

The point is we are going to hear—in fact, in the course of debate we will hear of a couple of scientists whose views were misinterpreted by the Senator from Oklahoma and by the Republican Policy Committee. We have their

rebuttals and we will be going into those. They state—not I state—that their views were completely distorted. The fact is, the overwhelming body of scientific opinion in America and the world believes that human activity is causing climate change in the world, and that is an irrefutable fact.

The opponents of this can shop around for the scientists of their choice, but the overwhelming majority of scientists say this and every year that evidence becomes more compelling and every year it becomes more of a compelling problem because of the manifestations of it. The manifestations of climate change are occurring, as we see on the west coast of the United States of America.

I ask my friend, won't you hear that the emperor has some beautiful clothes on during this debate; that there are some scientists who will refuse to admit this, who will say that pigs fly and up is down and black is white, but the majority opinion is that of the most respected body in America, the National Academy of Sciences, and they are the ones who come forward with the views that are corroborated by thousands of scientists all over America and the world?

I ask my colleague to comment on that.

Mr. LIEBERMAN. Mr. President, I thank my friend from Arizona. He is known globally, I might say, as a straight talker. He is basing that straight talk in this debate on scientific fact that is widely accepted—he is absolutely right—by international panels of scientists, by the independent National Academy of Sciences, and the National Research Panel.

I want to quote again from Don Kennedy, chief editor of the international, very reputable journal, *Science*. He says:

Consensus strong as the one that has developed around the topic of climate change is rare in science. There is little room for doubt about the seriousness of the problem the world faces.

I expect, unfortunately, that we will debate the science here. You and I, I know, are prepared to debate the science. But the fact is, we ought to be debating what we are going to do about it. We might argue, and some presumably will argue, that our proposal costs more than the American people are willing to spend. I don't think so. The polls don't show that to be true. People I talk to are ready to be part of solving a problem before it gets out of hand.

Some may say our methods are wrong, although a market-based system, such as the one that worked to deal with acid rain in the Clean Air Act amendments, proposed and signed by the first President Bush, has a pretty good track record.

But let's have that debate. It really takes us back way beyond where the science is to have a debate whether this is a real problem. I say again, to have a debate about what we should do about it, that might get our blood

going, but that is a reasonable debate. But to see the administration ask for yet another study, I just can't see that as anything more than a stalling tactic.

That is why I regret to say that this President really is fiddling while the globe is warming. We better do something about it before it gets so serious that we are going to look back and say: Why didn't we act?

This is a chance to have debate, the first debate in 5 years in the Senate Chamber on this critical problem. Let's have a healthy debate. Let's try to find common ground.

Senator MCCAIN and I have worked very hard to reach a consensus. This is not a sharp-edged bill. It is a bill that is progressive and builds toward common ground. And then let's move forward together so we can say to our children and grandchildren: We saved you from a result that we saw coming that many were not willing to do anything about, but we finally got together and did something about it.

I thank my friend from Arizona for his very good questions. I thank him for his principled partnership in this effort, and I look forward to the remainder of the debate.

I yield the floor.

The PRESIDING OFFICER. Who yields time? The Senator from Oklahoma.

Mr. INHOFE. Mr. President, first of all, let me just make a couple of comments, and then I will yield to the Senator from Missouri.

I know it is so easy to stand up here and talk about "the science is irrefutable," talk about how different groups are supporting S. 139. I know neither the distinguished Senator from Arizona nor the distinguished Senator from Connecticut would intentionally say something that is not true. However, some of the things they are saying are not true. They are not factual.

A little bit later I am going to be going into detail on this science question. The science that has been reviewed since 1999 is overwhelmingly on the side that global warming, in fact, is not occurring and, if it is occurring, is not a result of manmade anthropogenic gases.

I would also like to say, I will be talking about some of these groups that supposedly are supporting this bill who, in fact, are not supporting this bill. But I am going to save that for a few minutes because we have several Members who will be coming in on our side who will be wanting to address this issue. For that reason, I now yield to the Senator from Missouri 7 minutes.

The PRESIDING OFFICER. The Senator from Missouri is recognized for 7 minutes.

Mr. BOND. Mr. President, I thank the chairman of the Environment and Public Works Committee, the committee I believe properly has jurisdiction over this issue, a committee on which I serve and which has debated these

issues many times. I thank the Senator from Oklahoma for his leadership, his guidance, and his wisdom on these matters.

Interestingly enough, today I was reading a couple of news articles and it seems the Soviet Union is backing out on the Kyoto Treaty. Russia is now finding that they cannot live up to the commitments that were made in Kyoto, so Russia is bailing out on them. I just read another article that the European Union finds they really can't come up with all of these carbon dioxide reductions that they had promised. Why? Even in a Communist country they begin to realize that government actions have consequences. There are some impacts. These impacts are pretty stark.

Let me address for just a few minutes, for the benefit of my colleagues and those who may happen to listen, some of the practical impacts the passage of the McCain-Lieberman bill would have on our communities and on our families.

I strongly believe this bill will cripple our economy, cripple our communities, and financially cripple many of our struggling families. We can debate the science of climate change here on the floor until we are all blue in the face—and I think we may be headed in that direction. We have heartfelt experts, scientists, and data on both sides of the issue. I happen to believe the causal effect of CO₂ emissions and recent changes to our climate is not yet fully proven.

But the real impact, the real point of the McCain-Lieberman bill is, What will it do? That is kind of a practical test. I am from Missouri, the "show me" State. What would this bill do? Show me what this bill would do. How much will the McCain-Lieberman bill hurt our economy?

How much will the McCain-Lieberman bill drive up electricity bills for my constituents to pay? How much will the McCain-Lieberman bill raise the price of natural gas which is already going through the ceiling thanks to unwise governmental increases in demand and restrictions on production? How much more will the McCain-Lieberman bill force our families to pay for gasoline? It would be nice if we stopped once before we rushed into a major thing such as this and found out whether the medicine we prescribe was going to make the patient sicker or make the patient well.

I think we all recognize that our economy is just now starting to recover from the doldrums. We are just now starting to turn the corner on job growth. We are heading into a winter when we expect the cost to heat our homes will increase significantly because of previous overreaching congressional actions in the past. Now is not the time to place more burdens on our families and our communities.

As I said, I sit on the Environment and Public Works Committee where we

considered legislation to cut carbon dioxide as part of a multipollutant strategy to cut emissions from electric powerplants. Before that committee, supporters urged caps on carbon dioxide from electric powerplants as a way to fight global climate change. What they didn't want to talk about was the negative impact this measure would have on the everyday lives of our constituents—those who use electric power.

Experts conclude that the legislation under consideration to cut carbon dioxide in electric powerplants would cost the economy over \$100 billion. That is one-zero-zero billion dollars.

Experts also estimated that the electricity bills would go up by about 40 percent.

If you are sitting at home and you happen to have an electric bill handy, take it and multiply it by 1.4, see what that number is, and see what impact that would have on your family budget.

I have read heartbreaking stories from families in Kansas City who have to decide between buying food and paying their utility bills. Other families could not buy school clothes because they had to pay higher heating bills. Seniors on fixed incomes often have no way to meet higher utility bills.

I voted against that bill. And Democratic leaders when they controlled the Senate refused to even bring that measure to the floor because they knew what an impact it would have on senior citizens, what an impact it would have on the poor, and why union members who realize it can cost them their jobs object to it. We now have many of the same issues involved in this climate change bill.

The McCain-Lieberman bill would establish mandatory caps for carbon dioxide emissions. Economists and energy experts at the Department of Energy's Energy Information Agency—or EIA—recently concluded that the enactment of the McCain-Lieberman bill would result in a 46-percent increase in electricity prices, a 27-percent increase in the cost of gasoline, and a 54-percent increase in the cost of home heating oil.

Again, if you are at home and happen to have any of your last winter's bills handy, apply those percentages—a 50-percent increase in electricity and heating oil, a 27-percent increase in the cost of gasoline.

The EIA—the Government agency with the experts and the expertise—concluded that McCain-Lieberman would cost millions of Americans jobs. Excuse me. Did I say that right? Yes, I said that right—millions of American jobs. We are having slow job growth in our economy. We are working hard to get jobs back. This bill would cost millions of American jobs. Even if the sponsors dropped the second phase of this bill, it would still cost hundreds of thousands of jobs.

Do we really want to be raising costs on senior citizens, on poor people, and be throwing people out of work?

The EIA further concluded that McCain-Lieberman would cause a cu-

mulative decrease in the gross domestic product of \$1.4 trillion. Talk about sucking the wind out of the economic recovery; that baby would be flatter than a flounder.

The effect of this bill would be, first, to send our economy back into recession, then strip the Nation of hundreds of thousands of jobs, and then increase the cost of heating our homes. I, frankly, cannot think of a better combination of ills. That is a trifecta that we obviously cannot afford to undertake.

The most troubling part is that all of this pain would come without any real dent in the worldwide amount of carbon dioxide released into the atmosphere.

McCain-Lieberman suffers from the same inherent flaw of the failed Kyoto Treaty. It imposes absolutely no restrictions on two of the world's worst largest and fastest growing polluters in the world. In case you can't guess who those are, those would be China and India.

Not only do we unfairly punish U.S. communities but we let other countries off the hook and, therefore, have practically no real worldwide impact on carbon dioxide levels.

The Kyoto Treaty was rightfully rejected in advance by a unanimous vote in this body of 95 to zero for a very good reason. On top of all the unfairness of the Kyoto Treaty, we now know the crippling effects McCain-Lieberman would have on the economy, on our communities, on our families, and on job creation in our country.

For me, I cannot see voting to strip American families of hundreds of thousands or millions of jobs. I cannot see why we would be voting to increase electricity prices by 46 percent. I cannot see why we would be voting to increase the cost of home heating oil by 54 percent. That is why I cannot vote for this bill.

I urge my colleagues to think about the practical impact before we vote on this bill. This is a disaster waiting to happen. This would be another congressionally inflicted disaster.

For those reasons, I urge my colleagues to defeat McCain-Lieberman.

The PRESIDING OFFICER. Who yields time?

The Senator from Arizona.

Mr. MCCAIN. Mr. President, I yield myself 2 minutes.

That was a well-written presentation by my colleague from Missouri. Unfortunately, his analysis of the bill is not the bill that is before the Senate. But other than that, it was a pretty convincing case.

Our bill is different from the analysis he provided. In fact, it is significantly different. But even those facts on which we had the previous analysis were incorrect as well. But it was certainly an interesting presentation.

Mr. INHOFE. Mr. President, I have talked to our good friend, my brother, the Senator from Hawaii, and he has graciously agreed to let one of our Members go first before he is recognized.

At this time, I yield to the Senator from Ohio, Mr. VOINOVICH.

Before yielding to Senator VOINOVICH, I was honored to chair the Clean Air Subcommittee prior to the time I chaired the Environment and Public Works Committee. During that time, Senator VOINOVICH was Governor Voinovich. He was the chairman of the Governors Clean Air Committee. I don't believe there is anyone in this Senate who has a better knowledge of air problems or who has higher credentials than the Senator from Ohio.

At this time, I yield to the Senator from Ohio.

The PRESIDING OFFICER. The Senator from Ohio is recognized.

Mr. VOINOVICH. Mr. President, I thank the Senator from Oklahoma for his kind words. The two of us will try to explain to our colleagues the real meaning of this legislation proposed by Senator LIEBERMAN and Senator MCCAIN.

I rise in opposition to the legislation offered by Senator MCCAIN and Senator LIEBERMAN. This legislation will place a cap on carbon dioxide emissions by requiring all segments of the economy to reduce emissions to 2000 levels by 2010 despite the fact that such a cap would have devastating impacts on our economy, on our manufacturing sector, and on average Americans, and especially on our brothers and sisters, the elderly and the poor.

I have stated time and time again here on the floor that we must recognize that the energy policy and our environmental policies are two sides to the same coin and that the Senate has responsibility to harmonize those policies. We have an obligation in the Senate to ensure that any legislation we consider takes into account its potential impact on our economy, which is in intensive care, particularly in States such as mine. And we have a moral obligation to ensure that we consider a bill's potential impact on the poor and the elderly who must survive on a fixed income and who pay an inordinate amount of their income for energy. They are the forgotten people in this country. We must ensure that we do not pass climate change legislation that will significantly drive up the cost of electricity for those who can least afford it.

Although some science has attributed changes in the climate to atmospheric concentration of carbon, it is clear the science of climate change is far from settled. We need significantly more research on the issue. To accept the statements of supporters of S. 139 at face value is to accept one side of the debate, a very serious debate, among respected scientists and policy experts on both sides of the issue.

I recall the hearings Senator LIEBERMAN had when he was chairman of the Governmental Affairs Committee and two hearings I had. It was interesting to see the difference of opinion among very respected scientists in this country.

My distinguished colleague Senator INHOFE has discussed at length both in the Environment and Public Works Committee and in the Senate the newest information on the issue which is contrary to the views expressed by Senators MCCAIN and LIEBERMAN.

In a recent column, former Secretary of Energy James Schlesinger commented:

... despite the certainty many seem to feel about the causes, effects and extent of climate change, we are in fact making only slow progress in our understanding of the underlying science.

I ask unanimous consent the column by Mr. Schlesinger be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Washington Post, July 7, 2003]

CLIMATE CHANGE: THE SCIENCE ISN'T SETTLED

(By James Schlesinger)

Despite the certainty many seem to feel about the causes, effects and extent of climate change, we are in fact making only slow progress in our understanding of the underlying science. My old professor at Harvard, the great economist Joseph Schumpeter, used to insist that a principal tool of economic science was history—which served to temper the enthusiasms of the here and now. This must be even more so in climatological science. In recent years the inclination has been to attribute the warming we have lately experienced to a single dominant cause—the increase in greenhouse gases. Yet climate has always been changing—and sometimes the swings have been rapid.

At the time the U.S. Department of Energy was created in 1977, there was widespread concern about the cooling trend that had been observed for the previous quarter-century. After 1940 the temperature, at least in the Northern Hemisphere, had dropped about one-half degree Fahrenheit—and more in the higher latitudes. In 1974 the National Science Board, the governing body of the National Science Foundation, stated: "During the last 20 to 30 years, world temperature has fallen, irregularly at first but more sharply over the last decade." Two years earlier, the board had observed: "Judging from the record of the past interglacial ages, the present time of high temperatures should be drawing to an end ... leading into the next glacial age." And in 1975 the National Academy of Sciences stated: "The climates of the earth have always been changing, and they will doubtless continue to do so in the future. How large these future changes will be, and where and how rapidly they will occur, we do not know."

These statements—just a quarter-century old—should provide us with a dose of humility as we look into the more distant future. A touch of that humility might help temper the current raging controversies over global warming. What has concerned me in recent years is that belief in the greenhouse effect, persuasive as it is, has been transmuted into the dominant forcing mechanism affecting climate change—more or less to the exclusion of other forcing mechanisms. The CO₂/climate-change relationship has hardened into orthodoxy—always a worrisome sign—an orthodoxy that searches out heretics and seeks to punish them.

We are in command of certain essential facts. First, since the start of the 20th century, the mean temperature at the earth's surface has risen about 1 degree Fahrenheit.

Second, the level of CO₂ in the atmosphere has been increasing for more than 150 years. Third, CO₂ is a greenhouse gas—and increases in it, other things being equal, are likely to lead to further warming. Beyond these few facts, science remains unable either to attribute past climate changes to changes in CO₂ or to forecast with any degree of precision how climate will change in the future.

Of the rise in temperature during the 20th century, the bulk occurred from 1900 to 1940. It was followed by the aforementioned cooling trend from 1940 to around 1975. Yet the concentration of greenhouse gases was measurably higher in that later period than in the former. That drop in temperature came after what was described in the National Geographic as "six decades of abnormal warmth."

In recent years much attention has been paid in the press to longer growing seasons and shrinking glaciers. Yet in the earlier period up to 1975, the annual growing season in England had shrunk by some nine or 10 days, summer frosts in the upper Midwest occasionally damaged crops, the glaciers in Switzerland had begun to advance again, and sea ice had returned to Iceland's coasts after more than 40 years of its near absence.

When we look back over the past millennium, the questions that arise are even more perplexing. The so-called Climatic Optimum of the early Middle Ages, when the earth temperatures were 1 to 2 degrees warmer than today and the Vikings established their flourishing colonies in Greenland, was succeeded by the Little Ice Age, lasting down to the early 19th century. Neither can be explained by concentrations of greenhouse gases. Moreover, through much of the earth's history, increases in CO₂ have followed global warming, rather than the other way around.

We cannot tell how much of the recent warming trend can be attributed to the greenhouse effect and how much to other factors. In climate change, we have only a limited grasp of the overall forces at work. Uncertainties have continued to abound—and must be reduced. Any approach to policy formation under conditions of such uncertainty should be taken only on an exploratory and sequential basis. A premature commitment to a fixed policy can only proceed with fear and trembling.

In the Third Assessment by the International Panel on Climate Change, recent climate change is attributed primarily to human causes, with the usual caveats regarding uncertainties. The record of the past 150 years is scanned, and three forcing mechanisms are highlighted: anthropogenic (human-caused) greenhouse gases, volcanoes and the 11-year sunspot cycle. Other phenomena are represented poorly, if at all, and generally are ignored in these models. Because only the past 150 years are captured, the vast swings of the previous thousand years are not analyzed. The upshot is that any natural variations, other than volcanic eruptions, are overshadowed by anthropogenic greenhouse gases.

Most significant: The possibility of long-term cycles in solar activity is neglected because there is a scarcity of direct measurement. Nonetheless, solar irradiance and its variation seem highly likely to be a principal cause of long-term climatic change. Their role in longer-term weather cycles needs to be better understood.

There is an idea among the public that "the science is settled." Aside from the limited facts I cited earlier, that remains far from the truth. Today we have far better instruments, better measurements and better time series than we have ever had. Still, we are in danger of prematurely embracing cer-

titudes and losing open-mindedness. We need to be more modest.

Mr. VOINOVICH. Schlesinger points out that "science remains unable to either attribute past climate changes to changes in CO₂ or to forecast with any degree of precision how [the] climate will change in the future," and warns that:

We cannot tell how much of the recent warming trend can be attributed to the greenhouse gas effect and how much to other factors. In climate change, we have only a limited grasp of the overall forces at work. Uncertainties have continued to abound—and must be reduced. Any approach to policy formation under conditions of such uncertainty should be taken only on an exploratory and sequential basis. A premature commitment to a fixed policy can only proceed with fear and trembling.

Several Members of this body have introduced pieces of legislation this year and a couple last year to address the issue of climate change by capping carbon—such as the Jeffords-Lieberman 4-P bill, the Carper 4-P bill, and, of course, the subject of our debate today, the McCain-Lieberman climate change bill.

Passage of any of these bills will force our utilities which are now using coal to generate over half of our Nation's electricity—by the way, 85 percent of electricity generated in my State—to fuel-switch and to rely solely on natural gas for generation despite the fact we have a 250-year supply of domestic coal and are currently in the grips of a natural gas crisis.

Senator LIEBERMAN, in his opening statement, mentioned two companies from Ohio I am very familiar with, ADP and Synergy. There was some indication there was possibly—from his words—support for S. 139. I make it clear for the record that ADP and Synergy—ADP is the company that burns more coal than any other utility in the country—are both opposed to S. 139.

Mr. INHOFE. Will the Senator yield?

Mr. VOINOVICH. Certainly.

Mr. INHOFE. I am glad you brought that up. That was the information I had on who is opposed to it, naming Synergy. The Senator from Connecticut said they are now supporting S. 139. You have information to the contrary, is that correct?

Mr. VOINOVICH. Yes, I do.

Over the last decade, use of natural gas electricity generation has risen significantly while domestic supplies of natural gas have fallen. The result is predictable: tightening supplies of natural gas, higher natural gas prices, and higher electricity prices.

Home heating prices are up dramatically, forcing folks on low and fixed income to choose between heating their home and paying for other necessities such as food or medicine.

Donald Mason, a commissioner on the Ohio Public Utilities Commission, testified earlier this year in the House Energy and Commerce Committee:

In real terms, the home heating cost this winter will increase by at least \$220 per household. That might sound not significant,

but during the winter season of 2000–2001, one gas company in Ohio saw nonpayment jump from \$10 million a year to \$26 million.

One of the amendments I supported in the Senate to the Labor-HHS bill would have provided more money for LIHEAP, the low-income help in heating costs. We will have a crisis this winter in natural gas costs.

As a result of these heating cost increases, 50 percent more residential customers were disconnected from gas service last year than in 2001. I personally have seen natural gas go from \$4 an MCF to \$8 an MCF in heating bills in northeast Ohio and projections indicate this winter will be devastating on the elderly and low-income families who are already struggling to survive.

In an Environment and Public Works Committee hearing last year, Thomas Mullen, of Catholic Charities and Health and Human Services of Cleveland, described the direct impact of significant increases of energy prices on those who are less fortunate. Here is what he had to say:

In Cleveland, over one-fourth of all children live in poverty and are in a family of a single female head of household. These children will suffer from further loss of basic needs as their moms are forced to make choices of whether to pay the rent or live in a shelter; pay the heating bill or see their child freeze; buy food or risk availability of a hunger center. These are not choices that any senior citizen, child, or for that matter, person in America should make.

What really gets to me was after he made that statement the Clean Air Trust, the O'Donnell person who is always speaking out on these issues, named Tom Mullen, the head of Catholic Charities, as the villain of the month because he dared talk about energy costs impacting the poor and elderly in this country.

Manufacturers that use natural gas as feedstock are getting hammered because of the doubling and tripling of natural gas costs and are leaving the country or closing their doors. It is happening. Lubrizol, a chemical company, has moved production to France as a result of a threefold increase in natural gas prices from \$3 per million Btu in 2002 to \$10 per Btu in 2003. The president of Zaclon, a chemical manufacturer based in Cleveland, testified this year that increased natural gas costs resulted in lost sales revenue and increased total energy cost. The president of one major international pharmaceutical company, a company that has 22,000 employees in the United States, recently told me unless we do something about our natural gas crisis, his company will be forced to pull many of its operations out of the United States. Due to high natural gas prices, the Dow Chemical Company, headquartered in Michigan, will be forced to shut down several plants and eliminate 3,000 to 4,000 jobs this year. The American Iron and Steel Institute reported that an integrated steel mill—we have some in Ohio still—could pay as much as \$73 million for natural gas this year, up \$37 million from last year.

An east Texas poultry producer reported his poultry house heating bill jumped from \$3,900 to \$12,000 in one month, forcing him to decide between paying the bank or the gas company.

High natural gas prices have resulted in the permanent closure of almost 20 percent of the United States nitrogen fertilizer production capacity and the idling of an additional 25 percent. That is why the corn growers and other agriculture groups are opposed to McCain-Lieberman.

The Potash Corporation, one of the world's largest fertilizer producers, has announced layoffs at the Louisiana and Tennessee plants due to high natural gas prices. The company spends \$2 million per day on natural gas.

A farmer in Belleville, MO, who paid \$295 per ton for nitrogen fertilizer last fall expects to pay between \$400 and \$600 this year. It is impacting the entire segment of our economy.

Utilities are already facing tremendous increases in their fuels costs, which force them to either take losses or pass these increases on to their customers. And the carbon caps proposed by Senators MCCAIN and LIEBERMAN will only exacerbate this situation.

The end result is a drag on the economy. But don't take my word for it. Federal Reserve Chairman Alan Greenspan has testified before the Senate Energy Committee, the House Energy and Commerce Committee, and the Congressional Joint Economic Committee on the supply and price of natural gas this year, stating:

I'm quite surprised at how little attention the natural gas problem has been getting because it is a very serious problem.

Among his comments, Chairman Greenspan noted:

The price of gas for delivery in July closed at \$6.31 per billion Btu's. That contract sold for as low as \$2.55 in July 2000 and for \$3.65 a year ago.

Mr. President, I ask unanimous consent that the testimony of Dr. Greenspan be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

STATEMENT OF ALAN GREENSPAN, CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES, U.S. SENATE, WASHINGTON, DC, JULY 10, 2003

Today's tight natural gas markets have been a long time in coming, and distant futures prices suggest that we are not apt to return to earlier periods of relative abundance and low prices anytime soon. It was little more than a half-century ago that drillers seeking valuable crude oil bemoaned the discovery of natural gas. Given the lack of adequate transportation, wells had to be capped or the gas flared. As the economy expanded after World War II, the development of a vast interstate transmission system facilitated widespread consumption of natural gas in our homes and business establishments. On a heat-equivalent basis, natural gas consumption by 1970 had risen to three-fourths of that of oil. But consumption lagged in the following decade because of competitive incursions from coal and nuclear power. Since 1985, natural gas has

gradually increased its share of total energy use and is projected by the Energy Information Administration to gain share over the next quarter century, owing to its status as a clean-burning fuel.

Recent years' dramatic changes in technology are making existing energy reserves stretch further while keeping long-term energy costs lower than they otherwise would have been. Seismic techniques and satellite imaging, which are facilitating the discovery of promising new natural gas reservoirs, have nearly doubled the success rate of new-field wildcat wells in the United States during the past decade. New techniques allow far deeper drilling of promising fields, especially offshore. The newer recovery innovations reportedly have significantly raised the average proportion of gas reserves eventually brought to the surface. Technologies are facilitating Rocky Mountain production of tight sands gas and coalbed methane. Marketed production in Wyoming, for example, has risen from 3.4 percent of total U.S. output in 1996 to 7.1 percent last year.

Moreover, improving technologies have also increased the depletion rate of newly discovered gas reservoirs, placing a strain on supply that has required increasingly larger gross additions from drilling to maintain any given level of dry gas production. Depletion rates are estimated to have reached 27 percent last year, compared with 21 percent as recently as five years ago. The rise has been even more pronounced for conventionally produced gas because tight sands gas, which comprises an increasing share of new gas finds, exhibits a slower depletion rate than conventional wells.

Improved technologies, however, have been unable to prevent the underlying long-term price of natural gas in the United States from rising. This is most readily observed in markets for natural gas where contract delivery is sufficiently distant to allow new supply to be developed and brought to market. That price has risen gradually from \$2 per million Btu in 1997 for delivery in 2000, and presumably well beyond, to more than \$4.50 for delivery in 2009, the crude oil heating equivalent of rising from less than \$12 per barrel to \$26 per barrel. Over the same period, the distant futures price of light sweet crude oil has edged up only \$4 per barrel and is selling at a historically rare discount to comparably dated natural gas.

Because gas is particularly challenging to transport in its cryogenic form as a liquid, imports of liquefied natural gas (LNG) have been negligible. Environmental and safety concerns and cost have limited the number of LNG terminals and imports of LNG. In 2002, such imports accounted for only 1 percent of U.S. gas supply. Canada, which has recently supplied a sixth of our consumption, has little capacity to significantly expand its exports, in part because of the role that Canadian gas plays in supporting growing oil production from tar sands.

Given notable cost reductions for both liquefaction and transportation of LNG, significant global trade is developing. And high gas prices projected in the American distant futures market have made us a potential very large importer. Worldwide imports of natural gas in 2002 were only 23 percent of world consumption, compared to 57 percent for oil.

Even with markedly less geopolitical instability confronting world gas than world oil in recent years, spot gas prices have been far more volatile than those for oil, doubtless reflecting, in part, less-developed, price dampening global trade. The updrift and volatility of the spot price for gas have put significant segments of the North American gas-using industry in a weakened competitive position. Unless this competitive weakness is addressed, new investment in these technologies will flag.

Increased marginal supplies from abroad, while likely to notably damp the levels and volatility of American natural gas prices, would expose us to possibly insecure sources of foreign supply, as it has for oil. But natural gas reserves are somewhat more widely dispersed than those of oil, for which three-fifths of proved world reserves reside in the Middle East. Nearly two-fifths of world natural gas reserves are in Russia and its former satellites, and one-third are in the Middle East.

Creating a price-pressure safety valve through larger import capacity of LNG need not unduly expose us to potentially unstable sources of imports. There are still numerous unexploited sources of gas production in the United States. We have been struggling to reach an agreeable tradeoff between environmental and energy concerns for decades. I do not doubt we will continue to fine-tune our areas of consensus. But it is essential that our policies be consistent. For example, we cannot, on the one hand, encourage the use of environmentally desirable natural gas in this country while being conflicted on larger imports of LNG. Such contradictions are resolved only by debilitating spikes in price.

In summary, the long-term equilibrium price for natural gas in the United States has risen persistently during the past six years from approximately \$2 per million Btu to more than \$4.50. Although futures markets project a near-term modest price decline from current highly elevated levels, contracts written for delivery in 2009 are more than double the levels that had been contemplated when much of our existing gas-using capital stock was put in place. The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. It is not clear whether these losses are temporary, pending a fall in price, or permanent.

Such pressures do not arise in the U.S. market for crude oil. American refiners have unlimited access to world supplies, as was demonstrated most recently when Venezuelan oil production shut down. Refiners were able to replace lost oil with supplies from Europe, Asia, and the Middle East. If North American natural gas markets are to function with the flexibility exhibited by oil, unlimited access to the vast world reserves of gas is required. Markets need to be able to effectively adjust to unexpected shortfalls in domestic supply. Access to world natural gas supplies will require a major expansion of LNG terminal import capacity and development of the newer offshore regasification technologies. Without the flexibility such facilities will impart, imbalances in supply and demand must inevitably engender price volatility.

As the technology of LNG liquefaction and shipping has improved, and as safety considerations have lessened, a major expansion of U.S. import capability appears to be under way. These movements bode well for widespread natural gas availability in North America in the years ahead.

NATURAL GAS SUPPLY AND DEMAND ISSUES,
FULL COMMITTEE ON ENERGY AND COMMERCE,
JUNE 10, 2003, RAYBURN HOUSE OFFICE BUILDING

Hon. ALAN GREENSPAN,
Chairman, The Federal Reserve Board, Washington, DC.

In recent months, in response to very tight supplies, prices of natural gas have increased sharply. Working gas in storage is currently at very low levels relative to its seasonal norm because of a colder-than-average winter and a seeming inability of increased gas well drilling to significantly augment net marketed production. Canada, our major

source of imported natural gas, has had little room to expand shipments to the United States, and our limited capacity to import liquefied natural gas (LNG) effectively restricts our access to the world's abundant supplies of gas.

Our inability to increase imports to close a modest gap between North American demand and production (a gap we can almost always close in oil) is largely responsible for the marked rise in natural gas prices over the past year. Such price pressures are not evident elsewhere. Competitive crude oil prices, after wide gyrations related to the war in Iraq, are now only slightly elevated from a year ago, and where spot markets for natural gas exist, such as in Great Britain, prices exhibit little change from a year ago. In the United States, rising demand for natural gas, especially as a clean-burning source of electric power, is pressing against a supply essentially restricted to North American production.

Given the current infrastructure, the U.S. market for natural gas is mainly regional, is characterized by relatively longer term contracts, and is still regulated, but less so than in the past. As a result, residential and commercial prices of natural gas respond sluggishly to movements in the spot price. Thus, to the extent that natural gas consumption must adjust to limited supplies, most of the reduction must come from the industrial sector and, to a lesser extent, utilities.

Yesterday the price of gas for delivery in July closed at \$6.31 per million Btu. That contract sold for as low as \$2.55 in July 2000 and for \$3.65 a year ago. Futures markets project further price increases through the summer cooling season to the peak of the heating season next January. Indeed, market expectations reflected in option prices imply a 25 percent probability that the peak price will exceed \$7.50 per million Btu.

Today's tight natural gas markets have been a long time in coming, and futures prices suggest that we are not apt to return to earlier periods of relative abundance and low prices anytime soon. It was little more than a half-century ago that drillers seeking valuable crude oil bemoaned the discovery of natural gas. Given the lack of adequate transportation, wells had to be capped or the gas flared. As the economy expanded after World War II, the development of a vast interstate transmission system facilitated widespread consumption of natural gas in our homes and business establishments. On a heat-equivalent basis, natural gas consumption by 1980 had risen to three-fourths of that of oil. But natural gas consumption lagged in the following decade because of competitive incursions from coal and nuclear power. Since 1985, natural gas has gradually increased its share of total energy use and is projected by the Energy Information Administration to gain share over the next quarter century, owing to its status as a clean-burning fuel.

Recent years' dramatic changes in technology are making existing energy reserves stretch further while keeping long-term energy costs lower than they otherwise would have been. Seismic techniques and satellite imaging, which are facilitating the discovery of promising new natural gas reservoirs, have nearly doubled the success rate of new-field wildcat wells in the United States during the past decade. New techniques allow far deeper drilling of promising fields, especially offshore. The newer recovery innovations reportedly have raised the average proportion of gas reserves eventually brought to the surface. Technologies are facilitating Rocky Mountain production of tight sands gas and coalbed methane. Marketed production in Wyoming, for example, has risen from 3.4 percent of total U.S. output in 1996 to 7.1 percent last year.

One might expect that the dramatic shift away from hit-or-miss methods toward more advanced technologies would have lowered the cost of developing new fields and, hence, the long-term marginal costs of new gas. Indeed, those costs have declined, but by less than might have been the case because much of the innovation in oil and gas development outside of OPEC has been directed at overcoming an increasingly inhospitable and costly exploratory physical environment.

Moreover, improving technologies have also increased the depletion rate of newly discovered gas reservoirs, placing a strain on supply that has required increasingly larger gross additions from drilling to maintain any given level of dry gas production. Depletion rates are estimated to have reached 27 percent last year, compared with 21 percent as recently as five years ago. The rise has been even more pronounced for conventionally produced gas because tight sands gas, which comprises an increasing share of new gas finds, exhibits a slower depletion rate than conventional wells.

Improved technologies, however, have been unable to prevent the underlying long-term price of natural gas in the United States from rising. This is most readily observed in markets for natural gas where contract delivery is sufficiently distant to allow new supply to be developed and brought to market. That price has risen gradually from \$2 per million Btu in 1997 for delivery in 2000, and presumably well beyond, to more than \$4.50 for delivery in 2009, the crude oil heating equivalent of rising from less than \$12 per barrel to \$26 per barrel. Over the same period, the distant futures price of light sweet crude oil has edged up only \$4 per barrel and is selling at a historically rare discount to comparably dated natural gas.

Because gas is particularly challenging to transport in its cryogenic form as a liquid, imports of LNG have been negligible. Environmental and safety concerns and cost have limited the number of LNG terminals and imports of LNG. In 2001, LNG imports accounted for only 1 percent of U.S. gas supply. Canada, which has recently supplied a sixth of our consumption, has little capacity to significantly expand its exports, in part because of the role that Canadian gas plays in supporting growing oil production from tar sands.

Given notable cost reductions for both liquefaction and transportation of LNG, significant global trade is developing. And high gas prices projected in the American distant futures market have made us a potential very large importer. Worldwide imports of natural gas in 2000 were only 26 percent of world consumption, compared to 50 percent for oil.

Even with markedly less geopolitical instability confronting world gas than world oil in recent years, spot gas prices have been far more volatile than those for oil, doubtless reflecting, in part, less-developed global trade. The updrift and volatility of the spot price for gas have put significant segments of the North American gas-using industry in a weakened competitive position. Unless this competitive weakness is addressed, new investment in these technologies will flag.

Increased marginal supplies from abroad, while likely to notably damp the levels and volatility of American natural gas prices, would expose us to possibly insecure sources of foreign supply, as it has for oil. But natural gas reserves are somewhat more widely dispersed than those of oil, for which three-fifths of proved world reserves reside in the Middle East. Nearly two-fifths of world natural gas reserves are in Russia and its former satellites, and one-third are in the Middle East.

Creating a price-pressure safety valve through larger import capacity of LNG need

not unduly expose us to potentially unstable sources of imports. There are still numerous unexploited sources of gas production in the United States. We have been struggling to reach an agreeable tradeoff between environmental and energy concerns for decades. I do not doubt we will continue to fine-tune our areas of consensus. But it is essential that our policies be consistent. For example, we cannot, on the one hand, encourage the use of environmentally desirable natural gas in this country while being conflicted on larger imports of LNG. Such contradictions are resolved only by debilitating spikes in price.

In summary, the long-term equilibrium price for natural gas in the United States has risen persistently during the past six years from approximately \$2 per million Btu to more than \$4.50. The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. It is not clear whether these losses are temporary, pending a fall in price, or permanent.

Such pressures do not arise in the U.S. market for crude oil. American refiners have unlimited access to world supplies, as was demonstrated most recently when Venezuelan oil production shut down. Refiners were able to replace lost oil with supplies from Europe, Asia, and the Middle East. If North American natural gas markets are to function with the flexibility exhibited by oil, unlimited access to the vast world reserves of gas is required. Markets need to be able to effectively adjust to unexpected shortfalls in domestic supply. Access to world natural gas supplies will require a major expansion of LNG terminal import capacity. Without the flexibility such facilities will impart, imbalances in supply and demand must inevitably engender price volatility.

As the technology of LNG liquefaction and shipping has improved, and as safety considerations have lessened, a major expansion of U.S. import capability appears to be under way. These movements bode well for widespread natural gas availability in North America in the years ahead.

STATEMENT OF ALAN GREENSPAN, CHAIRMAN,
BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM BEFORE THE JOINT ECONOMIC COMMITTEE, MAY 21, 2003

Mr. Chairman, I appreciate the opportunity to testify before the Joint Economic Committee. As you will recall, when I appeared here last November, I emphasized the extraordinary resilience manifested by the United States economy in recent years—the cumulative result of increased flexibility over the past quarter century. Since the middle of 2000, our economy has withstood serious blows: a significant decline in equity prices, a substantial fall in capital spending, the terrorist attacks of September 11, confidence-debilitating revelations of corporate malfeasance, and wars in Afghanistan and Iraq. Any combination of these shocks would arguably have induced a severe economic contraction two or three decades ago. Yet remarkably, over the past three years, activity has expanded, on balance—an outcome offering clear evidence of a flexible, more resilient, economic system.

Once again this year, our economy has struggled to surmount new obstacles. As the tensions with Iraq increased early in 2003, uncertainties surrounding a possible war contributed to a softening in economic activity. Oil prices moved up close to \$40 a barrel in February, stock prices tested their lows of last fall, and consumer and business confidence ebbed. Although in January there were some signs of a post-holiday pickup in retail sales other than motor vehicles, spending was little changed, on balance, over the

following three months as a gasoline price surge drained consumer purchasing power and severe winter weather kept many shoppers at home.

Businesses, too, were reluctant to initiate new projects in such a highly uncertain environment. Hiring slumped, capital spending plans were put on hold, and inventories were held to very lean levels. Collectively, households and businesses hesitated to make decisions, pending news about the timing, success, and cost of military action—factors that could significantly alter the outcomes of those decisions.

The start of the war and its early successes, especially the safeguarding of the Iraqi oilfields, were greeted positively by financial and commodities markets. Stock prices rallied, risk spreads narrowed, oil prices dropped sharply, and the dour mood that had gripped consumers started to lift, precursors that historically have led to improved economic activity. The quick conclusion of the conflict subsequently added to financial gains.

We do not yet have sufficient information on economic activity following the end of hostilities to make a firm judgment about the current underlying strength of the real economy. Incoming data on labor markets and production have been disappointing. Payrolls fell further in April, and industrial production declined as well. Because of the normal lags in scheduling production and in making employment decisions, these movements likely reflect business decisions that, for the most part, were made prior to the start of the war, and many more weeks of data will be needed to confidently discern the underlying trends in these areas.

One reassuring development that has been sustained through this extended period of economic weakness has been the performance of productivity. To the surprise of most analysts, labor productivity has continued to post solid gains. Businesses are apparently continuing to discover unexploited areas of cost reduction that had accumulated during the boom years of 1995 to 2000 when the projected huge returns from market expansion dulled incentives for seemingly mundane cost savings. The ability of business managers to reduce costs, especially labor costs, through investment or restructuring is, of course, one reason that labor markets markets have been so weak.

Looking ahead, the consensus expectation for a pickup in economic activity is not unreasonable, though the timing and extent of that improvement continue to be uncertain. The stance of monetary policy remains accommodative, and conditions in financial markets appear supportive of an increased pace of activity. Interest rates remain low, and funds seem to be readily available to creditworthy borrowers. These factors, along with the ability of households to tap equity accrued in residential properties, should continue to bolster consumer spending and the purchase of new homes.

The recent declines in energy prices are another positive factor in the economic outlook. The price of West Texas intermediate crude oil dropped back to below \$26 per barrel by the end of April, but as indications of a delay in the restoration of Iraqi oil exports became evident and geopolitical risks crept back in, prices have risen to near \$30 a barrel—a worrisome trend if continued. Nonetheless, the price of crude oil is still about \$10 per barrel below its peak in February. This decline has already shown through to the price of gasoline in May. Some modest further declines in gas prices are likely in coming weeks, as marketers' profit margins continue to back off from their elevated levels of March and April to more normal levels.

In contrast, prices for natural gas have increased sharply in response by very tight supplies. Working gas in storage is presently at extremely low levels, and the normal seasonal rebuilding of these inventories seems to be behind the typical schedule. The colder-than-average winter played a role in producing today's tight supply situation as did the inability of heightened gas well drilling to significantly augment net marketed production. Canada, our major source of gas imports, has little room to expand shipments to the United States. Our limited capacity to import liquified natural gas effectively restricts our access to the world's abundant supplies of natural gas. The current tight domestic natural gas market reflects the increases in demand over the past two decades. The demand has been spurred by myriad new uses for natural gas in industry and by the increased use of natural gas as a clean-burning source of electric power.

On balance, recent movements in energy prices seem likely to be a favorable influence on the overall economy. In the short run, lower energy bills should give a boost to the real incomes of households and to business profits. To be sure, world energy markets obviously remain susceptible to politically driven supply disruptions, as has been evident recently from the events in Venezuela and Nigeria. But, even taking account of these risks, futures markets project crude oil prices to fall over the longer run, consistent with the notion that current prices are above the long-term supply price of oil.

As has been the case for some time, the central question about the outlook remains whether business firms will quicken the pace of investment now that some, but by no means all, of the geopolitical uncertainties have been resolved. A modestly encouraging sign is the backlog of orders for nondefense capital goods excluding aircraft, which has been moving up in recent months. Moreover, recent earnings reports suggest that the profitability of many businesses is on the mend. That said, firms still appear hesitant to spend and hire, and we need to remain mindful of the possibility that lingering business caution could be an impediment to improved economic performance.

One new uncertainty in the global economic outlook has been the outbreak of severe acute respiratory syndrome (SARS) in Southeast Asia and elsewhere. This epidemic has hit the economies of Hong Kong and China particularly hard, as tourism and business travel has been severely curtailed and as measures to contain the spread of the virus have held down retail sales.

To date, the effects of SARS on the U.S. economy have been minimal. Airlines have obviously suffered another seriously blow, and some U.S. multinational corporations are reporting reduced foreign sales. But the effects on other industries have been small. Initially, there had been some concern that SARS would disrupt the just-in-time inventory systems of U.S. manufacturers. Many of those systems rely on components from Asia, and any disruption in the flow of these goods has the potential to affect production in the United States. So far, however, U.S. manufacturing output has not been noticeably affected.

In recent months, inflation has dropped to very low levels. As I noted earlier, energy prices already are reacting to the decline in crude oil prices, and core consumer price inflation has been minimal. Inflation is now sufficiently low that it no longer appears to be much of a factor in the economic calculations of households and businesses. Indeed, we have reached a point at which, in the judgment of the Federal Open Market Committee, the probability of an unwelcome substantial fall in inflation over the next few

quarters, though minor, exceeds that of a pickup in inflation.

Mr. Chairman, the economic information received in recent weeks has not, in my judgment, materially altered the outlook. Nonetheless, the economy continues to be buffeted by strong cross currents. Recent readings on production and employment have been on the weak side, but the economic fundamental—including the improved conditions in financial markets and the continued growth in productivity—augur well for the future.

Mr. VOINOVICH. Mr. President, the Senate has passed a comprehensive energy bill that is currently stuck in conference with the House of Representatives. The energy bill passed by the Senate includes several provisions to increase domestic production of natural gas and to ensure that we have a healthy, vital fuel mix for electric generation.

It is vitally important for the conference committee to wrap up its work and report a bill that will increase our supplies of natural gas and promote alternatives to natural gas.

Unfortunately, the legislation that has been offered by Senators MCCAIN and LIEBERMAN goes in exactly the opposite direction. We are trying to free up more natural gas. We are trying to take the heat off the demand for natural gas. It will force our utilities to fuel switch to natural gas. It will significantly raise energy prices. It will cause additional thousands of jobs to be lost. And I agree with the Senator from Missouri, Mr. BOND, that is what is going to happen.

The Energy Information Administration estimates that passage of S. 139—I think this is really important, and our colleagues should listen to this—will raise petroleum products prices by 31 percent, raise natural gas prices by 79 percent, raise electricity prices by 46 percent, and reduce GDP by up to \$93 billion by 2025.

I just received a letter today from Commerce Secretary Evans, Labor Secretary Chao, and Acting EPA Administrator Horinko. Here is what they said in the letter:

According to an analysis conducted by the Independent Information Administration (EIA), S. 139 would cause an estimated average loss of 460,000 American jobs through 2025, with estimated job losses reaching 600,000 by 2012. Instead of improving our economic security through economic growth and job creation, the job losses resulting from S. 139 would place an unacceptable burden on American workers and the American people.

EIA's analysis further reveals the higher energy costs the legislation would impose on American energy consumers: once fully implemented, S. 139 would require a 40 cent per gallon increase in gasoline prices and cause a nearly 50% increase in natural gas and electricity bills.

As a result of these higher energy costs, EIA projects a net loss of \$507 billion (1996 dollars) in Gross Domestic Production over the next two decades. These higher energy costs and reduced economic growth would likely lead American businesses to move overseas, taking jobs with them.

Mr. President, I ask unanimous consent that this letter from Secretary

Evans, Secretary Chao, and Acting EPA Administrator Horinko be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

OCTOBER 28, 2003.

Hon. GEORGE VOINOVICH,
U.S. Senate, Hart Senate Office Building,
Washington, DC.

DEAR SENATOR VOINOVICH: We are writing to state our serious concerns about S. 139, "The Climate Stewardship Act of 2003," and to strongly urge that you vote against this bill to avoid the significant job losses and economic harm that it would inflict on our economy, without necessarily achieving any reduction in global greenhouse gas emissions.

According to an analysis conducted by the independent Energy Information Administration (EIA), S. 139 would cause an estimated average of 460,000 American jobs through 2025, with estimated job losses reaching 600,000 by 2012. Instead of improving our economic security through economic growth and job creation, the job losses resulting from S. 139 would place an unacceptable burden on American workers and the American people. EIA's analysis further reveals the higher energy costs the legislation would impose on American energy consumers: once fully implemented, S. 139 would require a 40 percent per gallon increase in gasoline prices and cause nearly a 50% increase in natural gas and electricity bills.

As a result of these higher energy costs, EIA projects a net loss of \$507 billion (1996 dollars) in Gross Domestic Product over the next two decades. These higher energy costs and reduced economic growth would likely lead American businesses to move overseas, taking jobs with them. As a result, S. 139 may actually lead to an increase in global greenhouse gas emissions as companies formerly in the U.S. move their operations (and emissions) overseas to countries that do not require similar emissions reductions. To compensate for the economic dislocation that S. 139 would cause, the legislation establishes a "Climate Change Credit Corporation" for "transaction assistance to dislocated workers and communities." However, we believe that the Senate should instead reject this legislation and avoid inflicting the harm that would create the need for such "transition assistance" in the first place.

President Bush has committed the U.S. to an ambitious and comprehensive strategy to address the issue of global climate change. It is based on the recognition that only a growing American economy can make possible the sustained investments in energy and carbon sequestration technologies needed to reduce the projected long-term growth in global greenhouse gas emissions. Because of its negative impacts on jobs and economic growth, we call upon the Senate to reject S. 139 as a misguided means of achieving our international environmental goals.

DONALD L. EVANS,
Secretary of Commerce.
ELAINE L. CHAO,
Secretary of Labor.
MARIANNE L. HORINKO,
Acting Administrator
of the Environmental Protection
Agency.

The PRESIDING OFFICER (Mr. COLEMAN). The Senator has used 7 minutes.

Mr. VOINOVICH. Mr. President, I ask for another 5 minutes.

The PRESIDING OFFICER. Who yields time?

Mr. VOINOVICH. Three?

Mr. INHOFE. Mr. President, I yield an additional 3 minutes from our side to the Senator from Ohio.

The PRESIDING OFFICER. The Senator from Ohio.

Mr. VOINOVICH. As I said, Mr. President, carbon caps mean fuel switching. Carbon caps mean the end of manufacturing in my State. They mean enormous burdens on the least of our brethren. And they mean moving jobs and production overseas.

What we need to do is move forward in a responsible manner, and move away from harshly ideological positions that advance nothing other than the agenda of environmental groups that have made support for carbon caps a political litmus test.

We must move forward in a manner that includes sound science and concrete reductions in carbon without seriously harming our economy.

In response to the need for better understanding of the underlying science of climate change, President Bush has moved forward aggressively to focus administration science and climate programs on a comprehensive approach to this issue.

Earlier this year, Secretary Veneman announced a new series of initiatives to increase agricultural sequestration of carbon, which is a major problem. The Department of Energy is implementing President Bush's \$2 billion Clean Coal Technology Initiative. And the DOE and the Environmental Protection Agency have worked with the State Department on several international carbon control and sequestration projects, including the exportation of clean coal technologies to underdeveloped nations.

I appreciate the steps the administration is taking on climate change. I would like to make clear today that, as a State legislator, county official, mayor, and Governor of Ohio, I have been able to work across the aisle with environmental groups to accomplish many things. Efforts were successful because reasonable minds were able to sit at the table together, work together in good faith, and get things done.

It is unfortunate in this debate that we have not been able to sit down with folks and work through this issue in good faith. Our friends in the environmental community and their allies in Congress have hardened their positions on climate change to the point that voting for carbon caps—despite the tremendous negative impact such caps have on jobs, the poor, and our economy—has become a litmus test.

In a word, this position is unreasonable. It is unreasonable that nothing other than capping carbon is acceptable. It is unreasonable that nothing other than forcing utilities to rely solely on natural gas to generate electricity and devastating our economy is acceptable. And, finally, it is unreasonable that nothing other than sending

American jobs overseas and driving up energy costs for the poor and elderly on fixed income is acceptable.

Mr. President, I have been fortunate to serve the State of Ohio for many years. I take my responsibility to serve my State's interests very seriously. And I will work all day, every day, to block legislation such as this legislation that will devastate my State.

I urge my colleagues to vote no on S. 139, a bill that will shut down our manufacturers, send thousands of American jobs overseas—to countries that do not have the environmental laws that we have in America—significantly raise energy prices for those who can least afford them, and do little or nothing to solve the global warming problem.

I yield back my time.

The PRESIDING OFFICER. Who yields time?

The Senator from Connecticut.

Mr. LIEBERMAN. Mr. President, I just want to, very briefly, respond to a few of the remarks of my friend from Ohio.

My friend from Ohio is talking about a bill that is not the one before us. The EIA estimate was of the original McCain-Lieberman bill. In an attempt to achieve consensus, we took off the second set of requirements. So now the bill says, to put it simply, that the Na-

tion has to reach the 2000 level by 2010 of greenhouse gas emissions. No EIA study has been done on this bill.

We have a study from the MIT Joint Program on the Science and Policy of Global Change. Just to put the minds of viewers at ease about what the impact of this will be on the cost of energy, MIT estimates that the bill before us will have a positive effect on coal prices, in fact, dropping them by 5 percent, natural gas prices by 5 percent, and crude oil prices by 2 percent.

Secondly, there has been some reference to Cinergy and American Electric Power. I want to make clear, I did not say—I certainly did not intend to say; I do not believe I did say—that those companies endorsed our proposal. But the fact is, Cinergy did testify that they could live by the amendment without additional cost. And that is the relevant part of it.

Mr. MCCAIN. Will the Senator yield for one question?

Mr. LIEBERMAN. I am happy to yield to the Senator from Arizona.

Mr. MCCAIN. I have a letter entitled "The State of Climate Science: October 2003, A Letter from U.S. Scientists"—1,010 scientists from across America. I want to go into it later on, but they say, in summary: The main conclusions of the IPCC and the NRC—that is the

National Academy of Sciences—reports remain robust consensus positions, supported by the vast majority of researchers in the fields of climate change and its impacts.

The body of research carried out since the reports were issued tends to strengthen their conclusion, 1,010 scientists.

We will probably hear it again, but they are relying on an analysis of a bill, because it is what was handed out, that is not even before the Senate. I argue to my friends, it is a waste of the Senate's time to argue statistics, as the Senator from Ohio just did, about a bill that is not before us.

Mr. LIEBERMAN. I thank the Senator from Arizona. I will yield the floor, but I ask unanimous consent that a summary of this MIT study of the bill before us and its cost impacts be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

ENERGY PRICE IMPACTS OF PHASE I OF S. 139, THE MCCAIN/LIEBERMAN CLIMATE STEWARDSHIP ACT ACCORDING TO THE JUNE, 2003, ECONOMIC ANALYSIS OF S. 139—BY THE MIT JOINT PROGRAM ON THE SCIENCE AND POLICY OF GLOBAL CHANGE

I. Fuel prices followed by % change from reference projections (+/-):

	2005	2010	2015	2020
Gasoline Prices (\$/gallon)	\$1.63 (0%)	\$1.72 (3%)	\$1.87 (4%)	\$2.14 (5%)
Coal Prices (\$/metric ton)	\$28.08 (0%)	\$27.56 (3%)	\$28.12 (-4%)	\$28.70 (-5%)
Natural Gas Prices (\$/mbtu)	\$3.31 (0%)	\$3.36 (-2%)	\$3.17 (-3%)	\$4.14 (-4%)
Crude Oil Prices (\$/bbl)	\$27.92 (0%)	\$28.31 (-1%)	\$31.08 (-1%)	\$36.58 (-2%)

Note 1: Prices are reported in 2001 \$.

Note 2: Phase I implementation of S. 139 is represented by Scenario #12 in the MIT analysis.

Note 3: The gasoline prices are inclusive of the carbon price, so that whereas the price index of coal drops (exclusive of the carbon price), the price of gasoline goes up when the carbon price is included. This is how the "upstream allowance" system works to affect gasoline consumption—through the gasoline price. Coal, oil, and natural gas prices, in contrast, do not include the carbon charge because in S. 139 emissions of CO₂ are controlled at the point of combustion, and so this charge will not be seen in the price.

Note 4: The reason for the natural gas price decline is that, while a bigger share of electricity is produced using gas, overall gas use does go down. (Electricity use goes down due to conservation because of higher electricity prices, so there is less overall need to generate as much electricity as in the reference case.) There are also some modest improvements in efficiency of gas in the electric power sector, and conservation and efficiency in other uses, as well.

Mr. LIEBERMAN. I believe the Senator from Maine is next on our side. I yield to her at this time.

The PRESIDING OFFICER. The Senator from Maine.

Ms. SNOWE. Mr. President, I commend Chairman MCCAIN for his extraordinary leadership on this issue, and Senator LIEBERMAN for being able at this point for the first time to debate global climate change here in the Senate. Chairman MCCAIN has held many Commerce Committee hearings.

As a member of that committee, I can tell you that he is focused singularly on this issue in terms of trying to address one of the most significant environmental issues facing this country in this century. It is long overdue, and this is the first real debate the Senate has had.

I am glad that Senator LIEBERMAN raised this issue on domestic reductions because that is what this legislation is addressing, domestic reduction of greenhouse gas emissions, specifically carbon dioxide, thought by the vast majority of international scientists to be the cause of global warming.

The legislation before us today, the McCain-Lieberman amendment to the Climate Stewardship Act of 2003, sets out to do just that in an environmentally and economically friendly way. I believe any future delay in acting on climate change will lead the U.S. down a path to even greater environmental damage and greater economic harm. As we review more and more the scientific evidence, it is clear to me that we have to address this issue in a very vigorous and aggressive way.

The main finding of the 2001 National Academy of Science report called "Climate Change Science: Analysis of Some Key Questions," was this:

Greenhouse gases are accumulating in the Earth's atmosphere as a result of human ac-

tivities, causing surface air temperatures and subsurface ocean temperatures to rise.

While this report did not rule out natural variability, it stated that:

... the changes observed over the last several decades are likely mostly due to human activities...

This first chart that I have from the Intergovernmental Panel on Climate Change should give us all great pause. The red line on this chart shows the extreme jump in increases in temperatures in the last decade alone when compared to the last 1,000 years, according to tree rings, corals, historical records, and from thermometers. Notice how the red line dramatically shoots up at the far right corner of this chart.

Since carbon dioxide emitted today will linger in the atmosphere on average of at least a century, this should be more of a red flag waving before our eyes than just a red line spiraling upwards as to why we should be attempting to reduce our greenhouse gas emissions now.

What is there not to get when you see the variations of the Earth's surface temperature for the past 1,000 years and see the dramatic incline in just the last few years alone?

Addressing global climate change is an issue that cuts across State and national boundaries as well as across interest groups. The majority of religious groups see it as a moral issue, and 75

percent of the general public, according to a new Zogby poll, supports actions under the McCain-Lieberman amendment. Some of the largest companies see it as a business issue. Dupont and BP, realizing climate change's effect on their bottom line, have already achieved larger reductions than our amendment calls for with no net cost.

As a matter of fact, the companies have posted an annual savings of \$365 million, and this amendment before us today will give them credits for these early actions.

One might wonder why a Senator from a cold State such as Maine would worry about a little more warmth, unless you consider the implications of climate change on a number of ecosystems that could be thrown out of balance and truly affect life as we know it.

As an example, predictions are that the range of the sugar maple, of significant economic importance to my State during the fall foliage season, will move northward over the next 50 years. The range of softwood and hardwood tree species that grow in Maine are also expected to shift, interfering with the long-term growth plans of the timber industry. In addition, at a recent "Climate Change and Horticulture" symposium at Cornell University, scientists stated that crops such as potatoes could be pushed north into Canada. This news doesn't bode well for Maine's crop or those of other potato States such as Idaho, Washington, North Dakota, and Oregon.

As you can see from this next chart, States across the country, as indicated in green, are urging the EPA to consider carbon dioxide a pollutant under the Clean Air Act, and have put carbon caps on powerplants, or are calling on Congress to address the need for reductions in manmade greenhouse gas emissions.

The green States with the stripes are currently investigating potential legislative positions the States can take for carbon sequestration through agriculture and forestry initiatives, a move that could be very important in capturing and storing carbon dioxide that will help with domestic emissions reductions.

As a matter of fact, the New York Times reported in this morning's edition:

In the last three years, state legislators have passed at least 29 bills, usually with bipartisan support [that address global warming.]

But it is not just the States that are taking action on this key issue, as mayors from large metropolitan areas and small rural towns, indicated on this chart by the yellow dots, have written Congress in support of the McCain-Lieberman legislation that we are considering tonight.

This past June, my State of Maine passed a bill mandating reductions in carbon dioxide emissions to below 1990 levels by the year 2020. The law re-

quires Maine to develop a climate change action plan by next July to guide State agencies, businesses, and others with a goal of reducing emissions. This bill grew out of a 2001 regional emissions agreement signed by six New England Governors and five eastern Canadian premiers.

New Hampshire has passed a law curbing carbon dioxide pollution from powerplants. On July 9, Northeast States, led by New York Governor George Pataki, called for a Maryland-to-Maine cap on global warming pollution from powerplants and announced a formal agreement for a regional strategy in the Northeast to reduce emissions through a market-based emissions trading system.

Over a year ago, the State of California passed legislation making it the first State to regulate tailpipe emissions of greenhouse gases. And just last month, the Governors of California, Washington, and Oregon announced plans to develop a coordinated strategy to reduce global warming.

In the Midwest, 10 years ago, Wisconsin implemented mandatory reporting requirements for large generators of carbon dioxide and is developing a registry that will enable firms to report carbon dioxide reductions that will allow them to obtain credits for these reductions in any future Federal and State greenhouse gas programs.

These grassroots efforts are sending Congress a clear and unequivocal message, and one that we should certainly listen to because our atmosphere knows no boundaries. We need to develop a national approach as a first step to emissions reductions for solutions that are environmentally and economically sound. The McCain-Lieberman amendment is a first step in that process.

Looking beyond the continental United States at the effects of climate change, scientists tell us that the snows of Kilimanjaro could vanish in 15 years.

The glaciers in the Bolivian Andes that once appeared indestructible may disappear in another 10 years.

In Alaska, where the average temperature has risen almost 5½ degrees over the past 30 years, there is evidence of melting permafrost, sagging roads, and dying forests.

There is also a 150-square mile, 100-foot thick mass of ice that has existed on the coast of Canada for 3,000 years that is disintegrating from a century-long warming trend, and the melting has been accelerating over the past 2 years.

Coral reefs, a large and integral part of the coastal oceans around the world, are under huge stresses as coral bleaching is induced by high water temperatures. Nature magazine reported there is a massive region-wide decline of coral which supports a huge variety of sea life across the entire Caribbean Basin.

Experts at a July 2003 NOAA workshop on coral reefs concluded that cli-

mate change will continue to render coral reefs even more vulnerable to human-related stresses, such as pollution, diseases, habitat destruction, and overfishing. Prevailing theory has generally held that the climate will respond to rising carbon dioxide and other greenhouse emissions by gradually growing warmer.

However, according to a December 2001 National Academy of Sciences report, a growing body of scientific evidence suggests that the climate does not respond to change gradually but in sudden jumps that such abrupt changes—and I quote from the report—"are not only possible but likely in the future."

If such a shift were to happen, it would have immense societal consequences. The report urged that a new research program be initiated to identify the likelihood of the potential impact of a sudden change in climate in response to global warming.

I am pleased the Senate Commerce appropriations legislation included \$1.6 million for abrupt climate change research that I and Senator COLLINS requested to establish a NOAA joint institute at the University of Maine for the study of abrupt climate change.

There is no doubt we will continue to need fossil fuel as an energy source. Yet at the same time we should be actively supporting increased use of renewable energy as well. Energy produced from wind, solar, geothermal, and hydropower do not emit carbon dioxide. We must have the will to change, and Congress must take actions to supply the incentives to promote these clean energies and for energy efficiencies so companies can make investments that extend over a period of time.

The amendment before us creates a cap in the trade system that gives businesses more certainty in their business planning, allowing them to receive credits for emissions reduction actions that they can then trade in the marketplace to others who may require credits to meet their obligations. Our proposal even allows the forestry industry to voluntarily enter this program and receive credits for sequestering carbon dioxide through the trees they plant.

We also need more accurate data of just how much carbon dioxide the United States is emitting into the atmosphere every year, and I am convinced we can obtain these numbers voluntarily from some of the worst offenders. So a mandatory registry and reporting system for emissions should be put in place as proposed under this amendment.

Mr. President, I urge the Senate to adopt the McCain-Lieberman amendment to the Climate Stewardship Act. This is going to be absolutely critical for the future of this Nation and for future generations. Through our ingenuity and technology, we need to begin to take the actions to mitigate and to adapt to changes in the global climate

system rather than just deferring through benign neglect the problems for other generations to address.

Working together, as this legislation is purporting to do, on a bipartisan basis, we have the ability to bequeath future generations a world better and more beautiful than was transmitted to us.

I yield back the remainder of my time.

The PRESIDING OFFICER. The Senator from Oklahoma.

Mr. INHOFE. Mr. President, we have agreed to go back and forth. I know Senator AKAKA has been waiting for a while. Certainly it is all right to go to him. I wish to make one point first.

It is a little unfair and unrealistic—and I want to make sure everyone interested in this issue understands, we have had the McCain-Lieberman bill for months now, and we have all had a chance to study it. The fact they changed this bill and they are saying you are not talking about the bill before you now, that did not happen until 11:53 this morning. We have not had a chance to see it.

The bottom line is this: As was stated by the Senator from Connecticut, this is just a start. So if their bill is just a start, what it does is recognize CO₂ as a pollutant, and that changes the policy for America. I think the debate from this point forward should go on as if we are talking about the original McCain-Lieberman bill. That is what we will be doing.

I yield to the Senator from Connecticut.

Mr. LIEBERMAN. Mr. President, I thank my friend from Oklahoma. With all respect, I say the Senator and others opposing our amendment may continue to talk about the original McCain-Lieberman bill, but that is not the one before us. We announced at a Commerce Committee hearing on October 1 that in an attempt to achieve consensus and find common ground, we were pulling back the second part of our proposal. The first part sets a goal of achieving the standards of emission of 2000 by 2010. The second part would have taken us back to 1990 standards by 2016. We pulled that back.

This is an attempt to try to see if we can move forward together. It has been out there for some period of time now, and the estimate we have seen of its effects comes from MIT, which I submitted for the RECORD earlier.

We will continue to debate whether the facts being presented are relevant to our amendment. I say respectfully they are not.

Mr. INHOFE. Mr. President, I had yielded to the Senator from Connecticut, so let me respond. There are other provisions that arose this morning that no one has seen. It is a new bill. It is a different bill. The Senator may have talked about it in the Commerce Committee. I am not on the Commerce Committee.

I will say this: To receive a bill after months and months of having this bill

to look at, preparing our case, only to find out at the last minute, since they obviously didn't have the votes, it was changed, and we received it at 11:53, is not realistic.

The PRESIDING OFFICER. Who yields time? The Senator from Connecticut.

Mr. LIEBERMAN. I thank the Chair. Mr. President, we did distribute a draft of this amendment last week, according to staff. I suppose in some sense we are progressing in this disagreement. I would rather disagree about the impact of the bill than disagree about the science that I think says so clearly the world has a problem. The globe is warming. It is the result of human activity, and we ought to figure out what to do about it.

We will continue this debate. I thank the Senator from Maine for her very eloquent statement on behalf of the amendment. I am very proud of the bipartisan support for the amendment. The truth is, this is a nonpartisan amendment, as the public support for doing something about global warming is truly nonpartisan.

Mr. President, I also thank my friend and colleague, the very distinguished Senator from Hawaii, for his patience and support of the bill. His experience as a Senator from Hawaii with the evidence of global warming is real. It goes beyond statistics and arguments. They have begun to see it with their own eyes. It is, therefore, with a real sense of gratitude I yield whatever time the Senator from Hawaii needs to make his statement.

The PRESIDING OFFICER. The Senator from Hawaii.

Mr. AKAKA. Mr. President, I rise today to support the Climate Stewardship Act of 2003. As a cosponsor of S. 139, I commend Senators LIEBERMAN and MCCAIN for their bipartisan efforts to craft an important first step in addressing the serious issue of climate change. As was mentioned by Senator LIEBERMAN, Hawaii, a State in the Pacific, is certainly subject to climate change. I also support the proposed amendment which establishes an emissions reporting database, provides climate change research grants, and requires a freeze on current levels of greenhouse gas emissions using a cap and trade system. I compliment Senators LIEBERMAN and MCCAIN for their continued leadership on this issue.

The United States makes up less than 5 percent of the world's population, but releases the largest amount of greenhouse gases of any country. The U.S. accounts for roughly 25 percent of the world's global emissions. In 2001, the National Research Council conducted a study on greenhouse gases at the request of the Bush administration. The council reported that concentrations of greenhouse gases are increasing as a result of human activities. In other words, elevated levels of carbon dioxide are not due solely to natural climate variations. One example is the increase in energy production from the burning of fossil fuels.

The council concluded that increased concentrations of greenhouse gases are causing surface air temperatures and subsurface ocean temperatures to rise. As you can see in the first chart, the World Meteorological Organization, WMO, shows an increase in combined land and ocean temperatures during the past 120 years. We can see clearly the trend that has occurred and where it is at this time. If we look farther back in the historical record, the second chart shows a dramatic spike in air temperature just after the Industrial Revolution. We can see that spike and rapid rise on the chart.

The Intergovernmental Panel on Climate Change, IPCC, a premier international working group, predicts an increase in air surface temperature. The IPCC estimates the increase would be between 2.5 to 10.4 degrees Fahrenheit from the year 1990 to 2100. The Panel also predicts that climate change will likely affect the distribution and availability of regional water resources. My colleagues should recognize that all the varied climate models and scenarios used by the IPCC show a continued increase in air surface temperature.

Strong evidence of increased atmospheric levels of greenhouse gases and climate change is obvious in my home State. The global warming debate began in Hawaii. Over 30 years ago, the Mauna Loa Climate Observatory documented evidence of increased carbon dioxide levels. This graph clearly shows an undeniable upward trend of carbon dioxide in the atmosphere around the world.

It is interesting to note, however, that island communities account for less than 1 percent of global greenhouse gas emissions. Major population centers and infrastructure are located along or near coastal areas. As a result, Pacific island nations are highly vulnerable to increased impacts of climate change. Scientists predict an increase of extreme climate change events such as hurricanes, floods, and droughts. The impacts of these events on business and agriculture in Hawaii and Pacific islands could be particularly severe and devastate our tourist-dependent economies.

In just the past 100 years, Honolulu's average temperature has increased 4.4 degrees Fahrenheit while precipitation has decreased by 20 percent. In Hawaii we have seen that "El Nino" events can have strong influences on our climate, causing prolonged periods of drought that hurt Hawaii's agricultural industry. Some climate projections show that the Pacific may actually transition into a more persistent "El Nino"-like state, causing dramatic changes to the ecosystem around the world. This change would not only affect farmers, but perhaps even permanently destroy many coral reefs and their associated fisheries throughout the Pacific. In the mid-1990s, El Nino events destroyed at least one-third of Palau's coral reefs. The costs of inaction on climate change far outweigh the costs of this bill.

Sea level rise is also a tremendous concern for Pacific island communities. It can greatly accelerate coastal erosion and saltwater intrusion into groundwater supplies. For many Pacific island nations facing severe shortages of drinking water, sea level rise is a devastating prospect. In Hawaii, sea level has risen six inches in Honolulu and nine inches in Hilo, the big island. The IPCC predicts that sea level will rise another one to two feet in the Pacific by the year 2100. The impacts of even a relatively small sea level rise on Pacific nations and atolls, some with maximum elevations which are less than ten feet above sea level, can be severe. As recently as 2001, rising sea levels caused the loss of land areas in Kiribati and Tuvalu, Pacific nations with low-lying atolls. In the Pacific, cultural activities were interwoven with the conservation of the environment. These traditions allowed the survival of dense populations on small land areas. Today, the global issue of climate change extends beyond our borders and threatens the livelihoods of these nations. Climate change is an important challenge and high priority for immediate action in the Pacific.

The U.S. has tried initiatives such as the Voluntary Reporting of Greenhouse Gases Program. These voluntary programs have not succeeded in reducing or even stabilizing total U.S. greenhouse gas emissions. Although program participants committed to reduce certain portions of their carbon dioxide emissions, many entities had substantial increases in their overall emission levels. This rise in emissions was due to increasing demands for their products and services. According to the Pew Center on Global Climate Change, total greenhouse gas emissions have increased approximately 12 percent between the years 1990 and 2001. Emissions are projected to increase another 42 percent by 2020. The United States needs to address climate change in a significant way. We must implement a responsible and reasonable policy to stop greenhouse gas emissions from rising.

Under the Lieberman-McCain amendment, the United States would adopt a uniform, Federal program to stabilize greenhouse gas emissions. The amendment would require all major electric power, industrial, or commercial facilities that emit over 10,000 metric tons of greenhouse gas per year to take action. A program that uses emissions trading would provide these sectors with the flexibility needed to determine the most cost-effective and practical approaches to stop greenhouse gas emissions from rising. The U.S. has already demonstrated that a cap-and-trade system can be both environmentally and economically effective. The primary example is the Acid Rain Program which was established in 1990 to reduce emissions of sulfur dioxide.

Four U.S. corporations are already taking the lead in reducing greenhouse gas emissions. BP, British Petroleum,

the largest oil and gas producer in the U.S., and DuPont, a \$24 billion/year corporation that produces chemicals, materials, and energy, have already taken on emission reduction strategies. Both BP and DuPont have claimed to save millions of dollars in the process. Cinergy, the largest burner of coal in the U.S., has pledged to reduce its greenhouse gas emissions by 5 percent with the belief that they can meet this target at no additional cost to the company or ratepayers. American Electric Power, the largest emitter of carbon dioxide in the U.S., has joined the Chicago Climate Exchange. This marketplace trades greenhouse gas emissions with a target of reducing emissions. The Governors of ten northeastern States developed a regional greenhouse gas trading program because of the lack of national leadership on climate change. Their program requires a mandatory cap on power plants in July of this year. In total, carbon reduction initiatives are already underway in 27 States.

We must take this first, critical step to stabilize greenhouse gas emissions in the United States. If we fail to address the issue of climate change now, the U.S. may have to face catastrophic and expensive consequences. A relatively small investment today is far wiser than spending vast amounts in the future to replace destroyed homes and infrastructure, restore altered ecosystems, and reinvest in collapsed agricultural economies. Scientists at MIT, the Massachusetts Institute of Technology, conducted a study that analyzed the proposed costs of the Lieberman-McCain amendment to S. 139. They estimated the cost to be less than \$20 per household per year.

The United States has the technological capabilities and intellectual resources to lead the world in an effort to reduce future greenhouse gas emissions. The Lieberman-McCain amendment demonstrates to the international community our serious commitment. The European Union, EU, has recently adopted a mandatory cap and trade program with a carbon dioxide reduction target of 8 percent by the year 2012. The proposed amendment only calls for a stabilization of U.S. greenhouse gas emissions. The compliance costs of the EU greenhouse gas reduction program are expected to total less than 0.1 percent of their GDP, Gross Domestic Product. Therefore, the EU predicts a minimal effect on their economic growth even under a rigorous approach.

I thank Senators LIEBERMAN and MCCAIN for recognizing the importance of climate change and taking the lead on legislation to stabilize greenhouse gas emissions. Research shows that our climate is changing due to human activities. It is clear that piecemeal, voluntary approaches have failed to reduce the total amount of greenhouse gas emissions in the United States. Now is the time to send a strong message that the U.S. is serious about the

impacts of climate change. A policy of inaction on climate change is not acceptable and will cost the United States more than preventive policies. I firmly believe that we can have economic growth while protecting the global environment. I urge my colleagues in the Senate to support the Lieberman-McCain amendment to S. 139.

The PRESIDING OFFICER. The Senator from Oklahoma.

Mr. INHOFE. I yield 10 minutes to the Senator from Alabama, Mr. SESSIONS.

Mr. SESSIONS. Mr. President, I thank Senator INHOFE for his leadership on this issue. I recall several years ago, as a member of the EPW Committee, we served on the Clean Air Subcommittee and had field hearings and took testimony from a number of the scientists who are still speaking out and discussing the issue of global warming. I remember Dr. Lindzen from Harvard sat back in one of our hearings, kind of relaxed, and he said: We can debate this global warming, but even if we do, the things people are proposing are not going to have any significant impact on the global climate situation in which we are involved.

I do think, as Senator INHOFE has ably pointed out, a lot of the scientific data is being disputed. One of the issues that I know about personally and have heard this witness, Dr. Christy, testify about, is the satellite data. Dr. John Christy at the University of Alabama at Huntsville studies NASA scientist space data, temperature readings in the upper atmosphere. According to the models that were supposed to predict global warming, those models called for the increase in temperature to show up first in the upper atmosphere.

According to his rigorous analysis of the upper atmosphere temperatures, they have not increased in the last 15 or 20 years—maybe just the most minute fraction, but probably not any.

So this contradicts some of the things we are hearing. I don't know what changes are out there in the environment. We know a lot of factors are involved.

Professor Sallie Baliunas from Harvard, an astrophysicist, has recently discussed sunspots and Sun activity, and charts that show that tend to correspond with increasing or falling temperatures.

I don't know. It could be increasing carbon dioxide, increasing soot, increasing other materials that have some impact on the environment, although it does appear—our best science shows in the early middle ages temperatures were hotter than they are today, before we had a lot of the things that people are complaining about.

What I want to get around to saying is I believe there are legitimate disputes about the validity and extent of global warming. There is little or no dispute that what the United States

does unilaterally is not going to have any impact on the situation that is happening in our global environment. We have countries, like India with a billion people and China with a billion people, that are growing dramatically and have almost no environmental controls and are not going to participate in environmental controls. What we do here, whether or not we can spend billions and billions of dollars, what impact will we have here? Not much, I submit.

I remember all these world gurus that met in Kyoto and they passed the Kyoto resolution and they wanted us to adopt the Kyoto accords. That was wonderful, to be at this conference and everybody got excited, apparently, and passed this resolution and asked all the nations to sign.

We studied that here in the United States. What they wanted to do, and this was in the late 1990s, I believe 1997-1998, they wanted the United States and the other countries to commit to reducing greenhouse gases 7 percent below 1990 levels by 2012.

Far from beginning to show a reduction, by the late 1990s we were 10 or more percent above the 1990 level. Projections of increased energy demands and other projections raised a clear indication that we were going to continue to show increases and not declines.

What I would say is that was ludicrous. It was totally unrealistic, could not be accomplished. Yet these so-called scientists were saying you are not a good person, you are not politically correct if you didn't agree to the Kyoto Treaty. So we had a big debate about it. We talked about it, and it became so apparent that it was so bogus and so unrealistic that when we voted, it was 97 to nothing, as I recall, to reject the Kyoto Treaty.

Senator MCCAIN and Senator LIEBERMAN have come back with a more modest proposal. One thing I would have to say about it is that the Kyoto accord at least proposed to bring other countries on board, to have them agree to these reductions. This one is a unilateral economic action, I suggest. It says that by 2010 we ought to be at 2000 levels. The projections for growth indicate that would be very costly to meet. The Department of Energy research group suggests that by 2010 it would create, that year alone, a \$45 billion cost on this economy. Make no mistake, \$45 billion is real money, and it comes right out of this economy. It is sucked right out of the growth of this economy. It adds to the bill of every business, every homeowner, and if it drives up the cost of natural gas as people say, it is going to take money out of the pockets of fixed-income Americans all over this country.

We cannot expect that there will be no cost for this.

The question is, Will the cost be worth the benefit? I suggest that President Bush has it right. Let us not focus on CO₂. Carbon dioxide does not hurt

you. We have to have it in the atmosphere. It is what plants breathe. In fact, the more carbon dioxide that exists, the faster plants grow. Plants will grow in desert environments much better with higher levels of carbon dioxide. It does not hurt our lungs. It doesn't hurt our health. It does not injure. Sulfur dioxide, mercury, other particulate pollutants are harmful to us. Also, we need to focus on those issues. As we focus on those issues, we will reduce CO₂ at the same time and perhaps that will play a role in our meeting some of the goals we are facing today.

But to commit ourselves to a political goal of reducing a gas that is not harmful, and reducing it by amounts suggested here that will have no impact on global warming but a significant adverse impact on our economy—which means jobs, jobs, jobs—is a mistake.

We have people in this body who say: Oh, we have too much unemployment; we have too many people who can't find work; we are seeing too many jobs go over to China. Do you think China is going to be meeting these requirements? Do we think they will be spending \$45 billion or more to get some minor increase that we were talking about here? I don't think so.

This reduces our competitiveness in the world marketplace. It hurts us as we seek to maintain our manufacturing. It hurts our people on fixed incomes. It increases their cost of heating and cooling their homes. It is a big-time mistake. We do not need to make this mistake.

I don't believe anybody will stand on the floor of this Senate and suggest that meeting CO₂ emission goals will help this economy. It can only hurt this economy.

Mr. MCCAIN. If the Senator will yield for a question, I will stand on the floor of the Senate and ask what climate change is doing to future generations of Americans—the fishing industry and the farming and the climate and the forest fires that are taking place in California as we speak. If the Senator will yield for a question, I will stand up—

Mr. SESSIONS. I will not yield for a question. I have accepted the speech of the Senator while I held the floor. I am pleased to do so. He is a great advocate.

But I repeat: It is going to hurt this economy. And everyone knows it. It is going to drive up the cost of energy. When you do that, it drives out jobs. It will be a unilateral economic disarmament—a unilateral act by this country in which other nations will not be participating. It will not help us.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. SESSIONS. Mr. President, I thank the Senator for my time. I appreciate the commitment of the Senator from Arizona, and I thank the Senator from Oklahoma, Mr. INHOFE, for his leadership and support him on this side.

I yield the floor.

The PRESIDING OFFICER. The Senator from Connecticut.

Mr. LIEBERMAN. Mr. President, I congratulate the Senator from Alabama for smiling his way through that intensive interrogation by the Senator from Arizona.

I now yield 10 minutes to the Senator from New York whose support for our amendment I greatly appreciate.

The PRESIDING OFFICER. The Senator from New York.

Mrs. CLINTON. I thank the Senator very much.

I am proud to rise in support of the bipartisan climate change legislation offered by Senators LIEBERMAN and MCCAIN. I will be brief in my remarks, because I believe that the sponsors of the amendment have eloquently made the full case for the legislation. But this is a very important issue, and I did not want to miss the opportunity to voice my support.

Climate change is greatest environmental challenge that we face. Its effects will unfold over decades and will touch every corner of the globe. I think the time to act is now.

First, I want to briefly touch on the science. Many of the details remain to be filled in, and I support further climate research so we can refine our understanding of how human activities are affecting the climate system. But there is already a strong scientific consensus that supports action now. The most definitive recent reports were issued by the Intergovernmental Panel on Climate Change and the National Research Council in 2001. In brief, the findings of those reports include the following:

No. 1, anthropogenic climate change, driven by emissions of greenhouse gases, is already underway and likely responsible for most of the observed warming over the last 50 years—the largest warming that has occurred in the Northern Hemisphere during at least the past 1,000 years;

No. 2, over the course of this century the Earth is expected to warm an additional 2.5 to 10.5 °F, depending on future emissions levels and on the climate sensitivity—a sustained global rate of change exceeding any in the last 10,000 years;

No. 3, temperature increases in most areas of the United States are expected to be considerably higher than these global means because of our Nation's northerly location and large average distance from the oceans;

No. 4, even under mid-range emissions assumptions, the projected warming could cause substantial impacts in different regions of the United States, including an increased likelihood of heavy and extreme precipitation events, exacerbated drought, and sea level rise;

No. 5, almost all plausible emissions scenarios result in projected temperatures that continue to increase well beyond the end of this century; and

No. 6, due to the long lifetimes of greenhouse gases in the atmosphere,

the longer emissions increase, the faster they will ultimately have to be decreased in order to avoid dangerous interference with the climate system.

These are disturbing findings from the most authoritative scientific sources we have. And the findings are further bolstered by an October 1, 2003, letter to the U.S. Senate signed by over 1,000 leading scientists.

So opponents who argue that we need more study before we act are simply wrong. We need to know more, but we already know enough to take initial steps to reduce the greenhouse gas emissions that are causing climate change.

I would add that we are already seeing the effects of climate change. Glaciers are retreating all over the world. In March 2002 the Larsen Ice Shelf on the Antarctic peninsula completely broke off and broke up. The glaciers in the mountains in the tropics are rapidly melting; e.g., the snows of Kilimanjaro will be gone by 2015. One of my staff members took a photo of himself on the summit in 1970 next to a 20 foot high glacier at Uhuru Point; 29 years later his daughter was at the same Uhuru Point and only a trace of ice was left.

We are already feeling the effects of climate change. And the scientific consensus is that unless we act to reduce emissions, the planet will continue to warm over the next century, with widespread and potentially devastating effects. These potential effects include more frequent extreme weather events, the wider spread of diseases such as West Nile, Eastern Equine Encephalitis, and malaria.

As a Senator from New York, I am concerned about coastal flooding if sea levels were to rise, and how that would affect communities on Long Island. I am concerned about how warming will affect the Adirondacks, where tourism and a way of life depend on cold and snow in the winter. I am concerned about impacts on New York farmers. But I am also concerned about impacts in other parts of the country and around the world.

I am in wholehearted support of the effort undertaken by Senators LIEBERMAN and MCCAIN to address this issue of climate change. I have to say I find it somewhat bewildering, this note of fatalism, this sense of pessimism, this defeatism I am hearing from the other side of the aisle.

No. 1, it is a real problem. You can say that it isn't. You can say it over and over again. It is a real problem, and it is a problem that is getting worse because we failed to attend to it.

But what bothers me is this idea that somehow America—the most innovative, creative nation the world has ever seen—cannot cope with this problem. This defeatism, this pessimism, this fatalism that I hear from the opponents is fundamentally un-American.

We have a problem. We should get about the business of addressing the problem.

What Senators MCCAIN and LIEBERMAN have done is to give us a roadmap to doing that. It may not be everything that many advocates would wish for, but it lays out a marker, and, more than that, it fulfills for me the traditional sense of how Americans respond in the face of a difficulty.

This legislation is not only necessary but I think it provides an opportunity. Yes, in the short run there may be some adjustments that are needed, just as there always are when we have to face inevitable or necessary change.

We are confronting the greatest environmental challenge when we talk about global climate change. There can only be one conclusion: Because of human activity, we are warming the Earth.

Some might say, "Well, it doesn't seem that bad to me," or, "The consequences don't seem that dire." But I believe we have disturbing findings from the most authoritative scientific sources that argue otherwise. The most definitive recent reports were issued by the Intergovernmental Panel on Climate Change and by the National Research Council in 2001.

I remind my colleagues that the National Research Council study was requested by the Bush administration. And it fundamentally confirms the results of the Intergovernmental Panel on Climate Change.

What was the response of the administration? Kill the messenger. Hide the findings. Order EPA to take the information about global climate change out of its review of the status of the environment.

You can deny a problem, you can ignore it, and you can delude yourself that it is not an issue. But I don't think that any longer is sustainable. It is not intellectually honest, and it is not politically defensible.

Opponents who argue that we need more study before we act are simply wrong. Yes, we need to know more, but we already know enough to take initial steps to reduce the greenhouse gas emissions that are causing climate change. That is what this legislation proposes to do.

There are so many facts that support the evidence of climate change—whether we talk about the Larsen Ice Shelf on the Antarctic peninsula breaking off and breaking up or whether we talk about the snow at Kilimanjaro.

I want to show this one picture because it is so telling. It comes from the personal experience of one of my fellows who is working with me on my staff. He took a photo of himself on the summit of Kilimanjaro in 1970 next to a 20-foot-high glacier at Uhuru Point. And 29 years later, his daughter was at the same point and there was only a trace of ice left. Maybe people climbed up there and carted the ice off. I don't know. Maybe that became some kind of economic activity that the folks in Tanzania decided to pursue.

That is not what happened. I think what happened is we have evidence in

the most dramatic way possible of the effects of 29 years of global warming. The scientific consensus is clear: That unless we act to reduce emissions, the planet will continue to warm over the next century, with widespread and potentially devastating effects. We have heard some of those mentioned already.

I listened carefully to the Senator from Maine talking about the change in everything from sugar maple to the potato crop in her State. I listened to my colleague from Hawaii, where we really began to acquire the evidence and understanding of global climate change.

I worry about disease. I think it is indisputable that we are seeing disease move up in latitude. Diseases such as West Nile, eastern equine encephalitis, and malaria are now found at latitudes that they have never been before.

As a Senator from New York, I am concerned about coastal flooding, if sea levels were to rise, and how it would affect the communities I represent and that my colleague from Connecticut represents at Long Island Sound and along the ocean.

I am concerned about the warming effects on the Adirondacks; I am concerned about the effects on New York farmers; I am concerned about the economy, if we do not act.

What is clear to me is that we have extraordinary economic opportunity. Since when did Americans say in the face of a challenge, Oh, my goodness, we can't admit it, we can't confront it, because we don't know how to deal with it economically?

We could be making money and creating jobs if we took seriously the opportunities for alternative energy and conservation. The fact that we do not is because of the stranglehold special interests who are committed to always producing energy have on this body and on the administration.

Let's be clear, we put out most of the greenhouse gasses from our country and we have the technological know-how, we have the understanding that would enable us to be the leaders in addressing this issue. That is why the bill offered by Senators MCCAIN and LIEBERMAN is so timely. Simply put, we would stabilize greenhouse gas emissions at 2000 levels by 2010.

Think of the energy we would unleash among our entrepreneurs if they got the go-ahead to deal with this challenge. A market-driven system of greenhouse gas tradable allowances would exempt farmers, residences, and auto manufacturers, and that would give us a chance to go forward to try to find solutions to the challenge of addressing greenhouse emissions. We know this cap-and-trade approach can enable cost-effective reductions in emissions. We have seen it in the implementation of the acid rain provisions of the 1990 Clean Air Act. We know that has worked. Why do we turn our backs on what we know works?

It is amazing to me how often the Congress, Capitol Hill, and Washington

end up becoming evidence-free zones because people do not want to deal with what the evidence demonstrates. We know the cost for this would be minimal.

Let's be honest. The science is clear. The opportunities are clear. This bill represents a modest and flexible first step. Despite the assertions of opponents, compliance costs will be minimal. The United States needs to regain leadership. We need to take responsibility. It gives a chance, then, to go to the rest of the world to try to build an international consensus. In the absence of some kind of protocol or treaty, we will be choking to death on the emissions from countries such as China and India as their standard of living rises. Now is the time to act. We owe it to our children and our grandchildren and generations beyond.

I thank the two sponsors for giving us the opportunity to go on record on the right side of history.

Ms. COLLINS. Mr. President, I rise to express my support for the goal of reducing greenhouse gas emissions to 2000 levels by the year 2010.

The scientific evidence that people are causing the Earth to warm grows more robust each year. According to the National Academy of Sciences, "Greenhouse gases are accumulating in the Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise. Temperatures are, in fact, rising. . . ." Indeed, a new scientific analysis shows that the Earth is warmer now than it has been in the last 1,000 years.

Perhaps most alarming is the rapid warming that is occurring in the Arctic. According to data released last week by the National Aeronautics and Space Administration, Arctic temperatures are currently increasing at a rate of two degrees per decade, and Arctic ice is melting at a rate of 9 percent per decade. Scientists are now projecting that the Arctic Ocean could be ice-free in the summer by mid-century. Due to the importance of the Arctic Ocean to the world's climate as a whole, this prediction is truly alarming.

To be sure, there are still numerous uncertainties. Researchers at the University of Maine have pointed out that past changes in the climate have tended to occur very abruptly, but we do not know if future changes in the climate will also occur in abrupt shifts. Nor do we know how quickly future warming will occur. Due to these uncertainties, I believe we should not only direct more attention to better understanding the climate, but also take prudent actions to reduce the risk of disruptive climatic changes.

The McCain-Lieberman Climate Stewardship proposal would reduce U.S. greenhouse gas emissions to 2000 levels by the year 2010. In light of the climate changes observed to date and the potential risks of even greater and more abrupt changes, I support this goal. It is a prudent step in the right

direction, and I intend to vote in favor of the McCain-Lieberman amendment.

Although I am in favor of the Climate Stewardship Act, I think more thought needs to go into the exact actions by which we reach the goal of reducing emissions to 2000 levels by 2010. These are important decisions, and Congress should not allow such important decisions to rest in the hands of the agencies. I support concrete, certifiable reductions, and these reductions should come primarily by increasing the efficiency of our economy and further developing our renewable energy resources. Increasing CAFE standards for automobiles, efficiency standards for air conditioners and other appliances, and reducing power plant emissions are just a few examples of concrete steps that we can take to reduce greenhouse gas emissions.

The United States has made tremendous strides in increasing the energy efficiency of the economy. In doing so, we have averted millions of tons of greenhouse gas emissions. With further steps in improving our energy efficiency, the McCain-Lieberman target is imminently attainable. I urge my colleagues to support this important legislation.

The PRESIDING OFFICER. Who yields time?

Mr. INHOFE. Mr. President, I yield 10 minutes to the distinguished Senator from Utah.

Mr. BENNETT. Mr. President, I have enjoyed listening to this debate either in person or over the television. I will not try to add to it with a plethora of statistics, forecasts, or predictions. Rather, I want to deal with some of the statements that have been made including some we have just heard from the Senator from New York and try to do a little math of a very simple and direct kind and ask a few questions.

First, the Senator from New York said the United States produces most of the greenhouse gasses. My understanding is the correct number is 25 percent of the greenhouse gasses produced in the world as a whole. That is the largest of any single country. It does not constitute most. But it is a plurality and pluralities win elections so that puts us in first place.

Now let us assume for the sake of following this through that we achieve a savings of 10 percent. I am not sure we will. No one is really sure in all of the predictions, dire and rosy, that are made with respect to this legislation how much the savings will be, but we will pick a number easy to calculate, 10 percent. That means, if the laws of mathematics have not changed, we would reduce the world emissions by 2.5 percent because 10 percent of 25 percent is 2.5 percent.

The question then arises, will the rest of the world stay static while we reduce the total by 2.5 percent or will a combination of China, India, Russia, Australia, what have you, increase the total by 2.5 percent so that the net effect in the atmosphere of America

doing this is zero. That is a very likely scenario. The net effect of the United States doing this as far as manmade emissions are concerned would be zero. Yes, we could reduce theoretically ours by 10 percent. That would be made up by the rest of the world.

The question arises, how much benefit is there to see to it that the overall world situation is as it is now with the United States producing no significant impact on the total?

The next question, what do we do if we reduce it by 10 percent? How do we do that? Obviously, we will need the power. Indeed, we will need substantially more power between now and the year 2010 if we are going to reduce the emissions that come from fossil fuel to generate the power we will have to go someplace else. There are a variety of places we can go.

One we hear often is we should use natural gas. We should replace coal with natural gas. That is a good idea. But let us understand something right now. We have in the United States currently a shortage of natural gas. As Alan Greenspan pointed out, that is one of our major economic challenges. He also has pointed out, natural gas is the one fossil fuel we cannot import. In order to import natural gas we have to have a pipeline, unless you liquefy it, and that is tremendously expensive, and we do not have the ports available to receive natural gas in liquefied form. The only places we can import natural gas are Mexico and Canada, and we are doing that.

If you look at a geological chart of the United States you find there is plenty of natural gas in the United States, but a very large percentage of that is on public land. Now the people who are telling us we must reduce greenhouse gas, namely the environmental groups, are the same people who are telling us we cannot drill for natural gas in the United States because that somehow will desecrate the public lands. I am not sure the land cares whether there is a drilling rig on it or whether there is a pipeline running across it, but certainly the Sierra Club cares. They say absolutely no drilling for natural gas on public lands.

If we cannot get to the natural gas, we will continue to use coal. Let's use clean coal. We have enough clean coal in the State of Utah to heat, light, drive the city of San Francisco for the next 300 years. We proposed mining that. Clean coal, low-sulfur coal would significantly reduce greenhouse gas emissions. Who got very upset at the idea we might start to use clean coal? The Sierra Club. They got President Clinton to declare a national monument right on top of the potential clean coal to make sure there would never be any coal mined from that place because environmentally they do not want any coal mines.

Well, we cannot use natural gas because we cannot get it off our public lands. We cannot use the clean coal in the West because we cannot get it off

our public lands. What is our alternative? Nuclear. That will do it. That is what they do in Europe. That is why Europe is in favor of Kyoto because they do not use fossil fuel to generate electricity; they use nuclear power.

So let's have nuclear plants all over the United States in order to produce the 10 percent reduction called for in this bill. Is the Sierra Club ready to endorse and embrace nuclear? They will not let us drill for natural gas. They do not want us to use the clean coal and they absolutely do not want us to build nuclear plants.

All right. Where else do we go? Well, in the West, we get a portion of our power from hydroplants. Dams have been built to store water. And as the water tumbles down the front of the dam, why, we get power. And it is the goal of the Sierra Club, and other groups that are supporting this bill, to dynamite these dams. They want to drain Lake Powell and dynamite the dam.

It is very interesting, if I could make a quick historic aside, when my father was in the Senate, and they were talking about building the Glen Canyon Dam that would produce this power, the Sierra Club opposed it and said: We will never, ever need that much power. But, they said, if for some reason we are wrong, and we should need that power, there is no point in building the dam to provide the power because look at all the coal that is there. The coal is the coal that they moved to make sure would never get mined.

I could embrace the idea of reducing the emissions in a test fashion to see if it did indeed have any impact on global warming if I could see the way clear to produce the power some other way than the way we are doing it now.

I would say to the Senator from Connecticut, who has excellent contacts in the environmental world, if he would go back to those who are supporting this bill and say to them, "In return for support of this bill, will you agree to drill for natural gas on public lands, to exploit low-sulfur coal where it exists on public lands, and to explore the possibility of more nuclear plants so that we don't become dependent on fossil fuel?" I might very well be interested in cosponsoring and voting for this bill.

But until those who are driving the debate publicly are willing to address the question of how you replace the sources of power that would have to be eliminated if this bill should pass, I intend to vote against the bill.

I yield the floor.

Mr. KYL. Mr. President, in 1997, the Senate unanimously passed the Byrd-Hagel resolution that stated that the Senate would reject any climate agreement that did not mandate "new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period" as the United States or that "would result in serious harm to the economy of the United

States." The Kyoto Protocol failed to meet these conditions, and consequently, President Clinton never submitted the protocol for Senate ratification, nor has President Bush.

The initiative before us, The Climate Stewardship Act of 2003, also fails to comply with the Byrd-Hagel resolution. First, it unilaterally commits the United States to carbon emissions restrictions, and second, it puts into place the regulatory structure for future carbon dioxide emissions reductions. This initiative represents the first phase in a long-term effort to reduce carbon dioxide emissions that would ultimately inflict serious harm on the U.S. economy. There is no need at this time to go down that path.

There are many reasons why the U.S. should avoid committing itself to carbon dioxide reductions. First, carbon dioxide is the unavoidable consequence of burning carbon-based fuels such as coal, oil and natural gas. The only way to get energy from a carbon-based fuel is to force the carbon to combine with oxygen through burning it. The result of that process is carbon dioxide, an odorless, colorless, non-toxic gas that sustains life. Reducing carbon dioxide to levels that would be climatically meaningful would mean using something other than coal, oil or natural gas to fuel our economy. Unfortunately, there are no economically viable alternatives to replace these fuels at this time.

This was made clear in a review of available energy technologies published in Science magazine in November 2002. In that review, a team of scientists many of whom are climate alarmists—concluded that our fossil fuel-dominated energy system "cannot be regulated away" and that we must instead rely on "the development within the coming decades of primary energy sources that do not emit carbon dioxide to the atmosphere."

The review notes that the United Nations' Framework Convention on Climate Change calls for a stabilization of greenhouse gases at levels that avoid "dangerous anthropogenic [man-made] interference with the climate system." Nobody really knows what that level is, but the authors of the study argue that stabilization at levels as low as 450 parts per million may be necessary to do this. The review states that, "[t]argets of cutting to 450 parts per million . . . could require a Herculean effort." And, "[e]ven holding at 550 parts per million is a major challenge." Incidentally, we are currently at 370 parts per million, so the Herculean effort would still result in carbon dioxide levels significantly higher than we have now.

Now I realize that the initiative before us falls well short of stabilizing atmospheric emissions at 450 or 550 parts per million. But let me be clear that if the Senate passes this initiative it would set a precedent that would lead to future, more costly reduction requirements. Currently, the executive

branch has no authority to regulate carbon dioxide emissions. Indeed, the Clean Air Act expressly forbids the executive to regulate carbon dioxide emissions. This initiative would create the architecture for a series of increasingly stringent controls on energy use. It is widely acknowledged that if indeed global warming is a serious problem, that even the Kyoto Protocol is woefully inadequate to meet the challenge. As noted by the EU, and elsewhere, "avoiding dangerous interference with the climate system . . . would require substantial (50 to 70%) global reductions in total greenhouse gas emissions." So this precedent-setting initiative would be the first stage of what appears to be a monumental and extravagantly expensive undertaking, and the levels of carbon dioxide in the atmosphere would still be higher than they are now after all our efforts and all the cost.

The Science review notes that the world's power consumption is about 12 trillion watts, 85 percent of which is supplied with fossil fuels. By 2050, total energy consumption will be as much as three times the amount currently produced by fossil fuels. The review states: "Energy sources that can produce 100 to 300 percent of present world power consumption without greenhouse emissions do not exist operationally or as pilot plants."

The authors conclude that the ability to stabilize greenhouse gas emissions without seriously damaging the economy is not possible at this time: "CO₂ is a combustion product vital to how civilization is powered." All of the possible alternative fuels "have serious deficiencies that limit their ability to stabilize global climate." The authors simply hope that we can "develop revolutionary changes in the technology of energy production, distribution, storage, and conversion."

In other words, the means to meaningfully reduce carbon dioxide emissions are not available, suggesting that the economy would suffer from a premature attempt to reduce emissions.

How would this initiative affect the U.S. economy? The Department of Energy's Energy Information Administration makes it quite clear that policies that regulate carbon dioxide emissions would most heavily impact coal, which is the United States' most plentiful and affordable domestic energy source, and is the most important fuel in electricity generation. Currently, 52 percent of America's electricity needs are generated from coal. And while that share is projected to decrease somewhat over the next 20 years, total coal use may well go up to keep up with growing electricity demand. It doesn't make a lot of sense to target our most important and plentiful domestic energy resource.

Incidentally, my State's only significant coal reserves are located on Black Mesa and the mine there is a major employer of Native Americans from the Hopi Tribe and Navajo Nation. This

mine also supplies secure, affordable energy for millions of Southwest families.

There is also a lot of concern up here about the decline in manufacturing jobs nationally. But the Energy Information Administration also makes it clear that energy intensive manufacturing industries would also be harmed by policies that regulate carbon dioxide.

Finally, we are not the only nation to come to the realization that Kyoto-style policies carry a hefty price tag. Russia made it quite clear at a recent United Nations' World Climate Conference that the Kyoto Protocol does not serve the economic interests of her people, and therefore will not be pursuing greenhouse emissions reductions. Andrei Illarionov, President Putin's chief economic advisor has stated that Kyoto is incompatible economic growth, noting that 40 years of data from 150 countries shows that GDP growth is highly correlated with increased carbon dioxide emissions. Thus Kyoto is incompatible with Putin's goal of doubling Russia's economic growth over the next 10 years, which would put the country slightly above its Kyoto target. Moreover, Illarionov stated: "But Russia isn't going to stop at this level, so the carbon dioxide level will be much higher." He concludes that supporting Kyoto would mean "dooming the country to poverty, backwardness and weakness."

And that is the message I want to leave with my colleagues. Engaging in Kyoto-style emission reduction programs are incompatible with economic growth at our current levels of technology, and to act now without sound scientific justification would be foolish. I urge my colleagues to vote no on S. 139.

The PRESIDING OFFICER. Who yields time?

Mr. INHOFE. Mr. President, I would like to inquire as to the amount of time we have left on our side.

The PRESIDING OFFICER. There are 30 minutes 35 seconds.

Mr. INHOFE. All right. Mr. President, I was telling my good friend from Connecticut a few minutes ago, if we keep hearing it repeated that "the science is real, the science is real, the science is real," sooner or later they are going to start believing it. Nothing could be further from the truth.

Let me just say, first of all, reference was made by one of the speakers to the Byrd-Hagel resolution that was passed 95 to 0. What did that resolution say? The resolution said, if there is economic damage or if the developing countries do not have to do the same thing the developed nations do, then we are not going to ratify the treaty. That is exactly what they came back with.

So here we have a situation now that is even worse because we are talking about passing a bill that would put the United States of America in a position where they have to do something that

not only the developing nations do not have to do, but even the developed nations do not have to do.

So I can tell you right now, there are a lot of people in China who are rejoicing, thinking: Boy, all those American jobs are going to come to us if they pass this. In India, they are rejoicing; in Brazil, the same thing. In South Korea, President Roh, and President Vincente Fox of Mexico would be delighted to think about the great jobs that would go there—many of which have already gone there because of some of our overregulation in this country.

Like Kyoto, this is an extreme approach. I am not going to try to figure out which bill we are talking about. The McCain-Lieberman bill has been around now for months. And now, at 11:53 this morning, they changed it. I don't know what was changed.

But I would say this: This is a cartoon that appeared that I think you will enjoy, I say to Senator LIEBERMAN. It is the camel's nose under the tent, the fact that if you get just a little bit here, then all of a sudden the rest of it will come in. And the rest of it is the body of Kyoto.

Now, why do I say that? I say that because they are actually saying one thing. I don't care how they change their bill, they are changing the policy of America to make us believe and have, as a new policy, that CO₂ is a pollutant. CO₂ is not a pollutant. Other things are pollutants.

In fact, we have the Clear Skies Act which the President of the United States, President Bush, is promoting. It has the largest reduction in emissions that any President has ever promoted, with a 70-percent reduction. And those are in sulfur dioxide and mercury.

But in this case here, just to show you that nothing really has changed by the last minute change, these features—the covered gases, emission caps, timetables, emissions trading, wealth transfer, emissions reporting, sequestration and sinks, verification, and future ratcheting—those are the same things that are in the current bill that appeared in the bill mysteriously at 11:53.

Now, I would like to suggest we have heard a lot of hysteria tonight. We are going to hear it tomorrow for 2 more hours—no, 1 more hour. That time is going to be equally divided, and they are going to be talking about the horrible things that are going to happen, the ice caps are going to be breaking, all these things.

I would suggest to you, Mr. President, we heard the same thing a few years ago. Looking at a couple magazines—this is *Science Digest*. They came out, and they said: "Brace Yourself for Another Ice Age." The same people who are talking about warming today were talking about bracing yourself for another ice age. If there were time, I would read the script. It is really enlightening to do so. I would encourage my fellow Senators to do that.

Then, Time magazine came out, and they have "Another Ice Age?" They talked about these horrible things that are going to happen: We are not going to be able to grow anything anymore. We are going to have to shut down businesses because we are no longer going to be able to function because we have another ice age—not global warming, global cooling.

Then along came Newsweek, and it says: "The Cooling World." They talk about the horrible things that are going to happen.

So it seems to me it is the strategy of those individuals who are catering to the extreme environmental left to try to scare people. And there is no reason to do that.

Now, I think probably the most significant thing I am going to be talking about tonight is to try to make people realize that if you say something enough times, as we keep hearing—as I mentioned a minute ago, about the science being real, about it is proven, and all that—sooner or later people believe it. One reason is we do have a liberal national media, and they would like to have people believe that.

Now, we heard a lot of discussion about the National Academy of Sciences. I would like to quote Dr. Frederick Seitz, who is the former president of the National Academy of Sciences, and 17,800 other independently verified signers.

Now, the Senator from Arizona talked about the 1,010 scientists. We are talking about 17,800. This is what the Oregon petition said. This is a petition that was put together by the lead, Dr. Frederick Seitz, the former president of the National Academy of Sciences, along with 17,800 other signatories:

We urge the U.S. government to reject the global warming agreement that was written in Kyoto, Japan, in December, 1997, and any other similar proposals. The proposed limits on greenhouse gases would harm the environment, hinder the advance of science and technology, and damage the health and welfare of mankind.

This is the former president of the National Academy of Sciences. He goes on to say:

There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate. Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth.

Now, this is significant. We are talking about not only is CO₂ not a pollutant—which it is not a pollutant—but it is a fertilizer. It is something that helps us and something that would be to the benefit to have more of, not less.

Now, in addition, there are over 4,000 scientists, 70 of whom are Nobel prize winners, who have signed the Heidelberg appeal.

The Heidelberg appeal says: No compelling evidence exists to justify controls of anthropogenic greenhouse gas

emissions. Anthropogenic is the term meaning "man-made." We keep hearing the Senator from New York talking about the man-made gases. It does not exist. These are 4,000 scientists. Look at some of the scientists we are talking about. They are on this list. It is too many to delineate at this time. The bottom line is that the science just flat is not there.

Ninety percent of the science—in fact, 100 percent of the science I have heard the other side talk about tonight is all science that they allege happened, but it was all before 1999. What we are talking about are things that have happened since then. There has been a turnaround.

Last July 8, James Schlesinger—we all remember him; he certainly is no Republican—the Energy Secretary to former President Carter, said:

There is an idea among the public that the science is settled. That remains far from the truth.

He goes on to talk about the fact that the science is not sound behind the myth, the hoax of global warming.

It is important to realize that the IPCC, which is the Intergovernmental Panel on Climate Change, came from the United Nations with the idea that they are making the recommendations. The lead scientist behind that was a scientist named Dr. Michael Mann.

What we have done here is talk about what has happened in terms of the science that has come from this recent 2003 science, as opposed to what came under Michael Mann or the the Intergovernmental Panel on Climate Change. One is the detail, less hemispheric, and the information that they used, the age of the data. Under Michael Mann it was older, 1999 or before. The newer is after the IPCC. This is all new stuff. I will submit this for the RECORD because it is all very self-explanatory.

Several times reference was made by the distinguished Senator from Connecticut to MIT and what MIT is saying to us. I would like to quote Dr. Richard Lindzen, an MIT scientist and a member of the National Academy of Sciences. Both of these—MIT and National Academy of Sciences—were used to fortify the case that this hoax called greenhouse gas is a reality. This is what Dr. Rich Lindzen said. He has specialized in the climate issue for over 30 years. He told the Committee on Environment and Public Works, the committee I chair:

There is a definite disconnect between Kyoto and science. Should a catastrophic scenario prove correct, Kyoto would not prevent it.

These are new discussions that are coming from scientists whose credentials cannot be questioned. Again, it is MIT science—we heard that a few minutes ago—and the National Academy of Sciences.

Dr. David Legates is director of the Center for Climatic Research at the University of Delaware. This is going back to Michael Mann, the guy who is

the scientist behind the IPCC, all this stuff that we have been hearing. Dr. Legates said:

Although [Mann's work] is now widely used as proof of anthropogenic global warming, we've become concerned that such an analysis is in direct contradiction to most of the research and written histories available. Our paper shows this contradiction and argues that the results of Mann . . . are out of step with the preponderance of the evidence.

Preponderance of the evidence, we keep hearing the other side say the science there. No one is going to question it. We are all questioning it.

This is from a publication called "Energy and Environment," and this was November 15, last week. It starts talking about the flaws in the logic that were used by the Mann study. The flaws all come out. I will show the greatest flaw of all.

Let me hold this piece of paper up to this side. This is what Dr. Mann has been talking about. He referred to the famous hockey stick. Here is the hockey stick. The shaft goes along here and all of a sudden that is the hockey stick part. That is supposed to be where it is getting so warm. What he failed to do was to go back to the 1400s. If you look at this, the Earth was much warmer, the temperatures were much warmer back then than they are today by a long ways. So it is just leaving out these little convenient things that causes the truth to be distorted.

I think this is probably the most important chart. It shows you what the other side does. They will cover up the part that disclaims everything they are saying and come out and use it as evidence to promote it. I am saying that the temperatures on the Earth's surface were higher in the 1400s than they are today.

One of the most recent things that came out just in March was the Harvard Smithsonian study. This was the most far-reaching study ever made on climate change. It examined the results of more than 240 peer-reviewed papers published by thousands of researchers over the past four decades. The study covers a multitude of geophysical and biological climate indicators. They came to the conclusion that climate change is not real, that the science is not accurate. We will be coming back to that from time to time, probably tomorrow also.

This is the range of climate proxies that were used to come up with the conclusions of the Harvard Smithsonian study. If you read them all, it starts with borehole data, cultural data, glacier advance and retreats, geomorphology, all these things were used. Primarily what was used by Dr. Mann were the tree rings. And this covers every known type of a proxy that could be used. All of this was in the Harvard Smithsonian study.

So I think if you go back one more time to the chart that we had up here that shows how they are misrepresenting the data, if you stop and think about it, just use logic on things that

we know. What is incontrovertible? What do we know right now that no one can question? What we know is that there was a medieval warming period. That period was around from 800 A.D. to about 1300. Then there was the little ice age that came along. The little ice age went from 1300 to 1900. Then we went into another warming period that endured from 1900 until 1940.

Something significant happened in 1940. In 1940, we started going into another cooling period. But wait a minute. The 1940s was the decade when the surge came in CO₂ emissions. That was during the time when more people were driving, and it happened right after the war. So we had the greatest increase in releases of CO₂ during that time, an 80-percent increase.

What did that do? Did that cause warming? It did not. It precipitated a cooling period that endured through the 1970s. I think if you look at that, I don't know how anyone can say that the science is at all favoring—and certainly not recent science—the concept, I call it a hoax, of global warming.

Since I gave a speech on the floor when I used these charts, which I may not have time to do tonight, there have been a lot of things that have come out. The University of Colorado researched the Arctic Circle information. To do that, they actually went down beneath the snowpack in the Colorado Rockies, and the scientists discovered fungi emitting large quantities of carbon dioxide in methane. Of course, this is totally unrelated to manmade emissions. That is not man-made. They are talking about man-made emissions. That is something that was there that was never considered until it was discovered about a month ago. They said in an article in the Washington Post, quoting the scientist:

Indeed, scientists said, if other regions of the world have similar fungal communities thriving under the winter snows, as seems likely, climatologists will have to revise their models of global warming to accommodate fungi surprisingly massive role in the winter production of greenhouse gases, such as carbon dioxide.

It went on to say—these are the scientists now, after this discovery just a month ago:

The global warming models can no longer ignore fungi in snowy regions and seasons as they had, scientists said, especially because about 40 percent of the landmass is covered with snow for at least part of the year.

We will revisit this issue, but there is no question that the science refutes everything the alarmists we have heard about have been trying to promote. I think something that would be more meaningful to the Members of this body would be, so what, there is. There is a preacher named Lon Solomon. On the rare occasions I am here on Sunday, I will go out to the McLean Bible Church. Right in the middle of his sermon he says: So what.

We have gone through all this, the science is flawed, it doesn't exist. So what. What is the big deal? The big deal is the economic harm that would

come to this country. Let's examine it for a moment.

Later on I will go over all of the letters, but here is what the teamsters, boilermakers, electrical workers, and others wrote me in a letter on September 9—this past September 9. This is not in 1999. They write:

Mandatory reduction requirements for carbon dioxide and other greenhouse gases would create much higher energy prices for consumers and put the economic recovery at risk, while providing little or no tangible benefit for the global environment. We, therefore, urge you to vote against S. 139, the Climate Stewardship Act.

CBO, the Congressional Budget Office—we depend on them for scoring, for coming up with numbers we use to make economic decisions in this body. They said it best:

The price increases resulting from a carbon cap would be regressive. That is, they would place a relatively greater burden on lower income households than on higher income households.

A minute ago we heard Senator VOINOVICH from Ohio. During one of our committee hearings, a guy named Tom Mullen, who is the president of Catholic Charities, testified before our committee and said:

The overall impact on the economy in northeast Ohio would be overwhelming, and the needs that we address at Catholic Charities in Ohio with the elderly and poor would be well beyond our capacity and that of our current partners in government and the private sector.

You heard about the harassment he has been subjected to because he cares—sincerely, genuinely cares—about these older people.

What about minorities? According to a study by the National Black Chamber of Commerce and the United States Hispanic Chamber of Commerce, if the United States ratifies Kyoto or passes domestic climate policies—that is what we are talking about, effectively implementing the treaty; that is their goal—the result would “disproportionately harm America's minority communities, and place the economic advancement of millions of U.S. Blacks and Hispanics at risk.”

That was the Center for Energy and Economic Development doing a study for the Black Chamber of Commerce and the Hispanic Chamber of Commerce.

It gets down to being more specific. We find out from this study that the Kyoto issue we are talking about right now would cost 511,000 jobs by Hispanic workers and 864,000 jobs held by black workers. Poverty rates for minority families will increase dramatically, and because Kyoto will bring about higher energy prices, many minority businesses would be lost.

Here is a chart that shows the unemployment rate this study revealed. This study was sanctioned by the Black and Hispanic Chambers of Commerce because of their concern. Keep in mind all these things will happen to them, and yet there is no science or logic behind those decisions.

This information came from Pennsylvania State University. They did a study. In this study, they break it down by State as to how many jobs are going to be lost. I will point out a couple of States.

Illinois would lose, if we were to pass S. 139, 159,000 jobs. I hope the Senators from Illinois are watching right now because 159,000 jobs is not what they would want. Ironically, in Indiana, they would lose 194,000 jobs. In Michigan—and that is a big auto State—they would lose 133,000 jobs. They tell you we are going to carve out a special deal for the autos. Look, this is the nose-under-the-tent concept. They now say if we adopt this, our policy is the science is real and global warming, in fact, exists.

In Pennsylvania—and I am sure the Pennsylvania Senators are very sensitive to this—they would lose, if we pass this bill, 178,000 jobs. In the State of West Virginia, it will be 126,000 jobs; in Wisconsin, 113,000 jobs; for the interest of the Senator presiding, over 100,000 jobs in the State of Minnesota.

Something was stated by the Senator from Connecticut concerning farms. He said we are going to carve out farmers and agriculture, that nothing is going to happen there. Standard & Poor's Data Resource International did a study—again, a very recent study. They talked about what is going to happen.

Let me share with my colleagues what will happen to the agricultural families in America, according to Standard & Poor's. You can discredit Standard & Poor's, but I don't think you will get by with it. They are legitimate.

Fewer small family farms: Higher energy costs, together with the reduced domestic and export demand, would lead to a severe decline in agricultural investment and a sharp increase in farm consolidations. The number of small farms likely would decline much more rapidly than under business-as-usual conditions.

Higher production costs: Production costs would increase by up to \$16 billion, an increase of almost 9 percent, and would be difficult for agriculture to pass on to the consumers. These higher production costs include a \$13 billion increase in manufactured input—that is fuel, fertilizer, and chemicals—expenditures, and \$1.6 billion increase in farm origin.

Lower demand for agricultural products: Weaker demand for agricultural products results both from the 1.6 percent decline in GDP and 2.4 percent decrease in consumers' disposable income. It goes on and on.

Higher food program costs: If you are not sensitive to the farmer, you ought to be sensitive to the people who have to eat in this country. For example, USDA spends more than \$39 billion for six food assistance programs, including the Food Stamp Program—there are a lot of people interested in that program—and child nutrition programs. We talk about that every day.

For these programs alone, emission controls from the protocol would add 500,000 persons to the food stamp rolls and increase program costs up to 5 percent annually.

Again, this is not Senator JIM INHOFE talking. I am not qualified to make these assessments. This is a study made by a Standard & Poor's research group.

Getting back to the MIT joint program, since they have been used quite a bit, the MIT Joint Program on Science and Policy of Global Change, the average crop yield is 30 percent higher in a CO₂-enhanced world.

That is what the Senator from Utah was talking about.

I inquire from the Chair as to our remaining time.

The PRESIDING OFFICER. Three minutes and thirty seconds.

Mr. INHOFE. I reserve the remainder of my time. I am anxious to hear from the Senator from Connecticut and the Senator from Arizona.

The PRESIDING OFFICER. The Senator from Arizona.

Mr. MCCAIN. Mr. President, devastating fires across California fueled by unusual drought conditions have already claimed the lives of 18 people, destroyed nearly 2,000 homes, consumed nearly 600,000 acres roughly the size of Rhode Island, and caused over \$2 billion in damages. Glaciers in Glacier National Park have dwindled from 150 more than a century ago to about 35 today. Some scientists estimate that the park will have no glaciers in 30 years. An ice-dammed lake drained recently when the Ward Hunt Ice Shelf, which a century ago rimmed the entire northern coast of Ellesmere Island, broke up along the coast of northeast Canada. NASA has confirmed that part of the Arctic Ocean that remains frozen year-round has been shrinking at a rate of 10 percent per decade since 1980.

We can talk about the impact of the Kyoto Treaty, as Senator INHOFE just did. I call the attention of my colleagues to this picture. Here is the Arctic Sea ice boundary in 1979. There it is today. I am sure that that will be natural causes and have nothing to do with man-made activity, human activities, but the fact is, as the Senator from New York showed, Kilimanjaro is now without snow.

At a conference in Iceland in August, scientists told senior government officials that the Arctic is heating up fast, disclosing disturbing findings from a massive study of polar climate change. Dr. Robert Corell, who heads the Arctic Climate Impact Assessment team, said: If you want to see what will be happening in the rest of the world 25 years from now, just look at what is happening in the Arctic.

Look at what is happening in the Arctic. The destruction of 70 percent of heat-sensitive coral reefs due to increases in water temperatures places reef fisheries in jeopardy, increases coastal damages from hurricanes, and hurts local economies supported by tourism.

Researchers at the University of Texas, Wesleyan University and Stanford University earlier this year reported in the journal *Nature* that global warming is forcing species around the world, from California starfish to Alpine herbs, to move into new ranges or alter habits that could disrupt ecosystems.

The end result of these changes could be substantial ecological disruption, local losses in wildlife, and even extinction of certain species.

From an article in the July 2003 *Journal of Hydrology*: The winters in New England are getting shorter. According to U.S. Geological Survey scientists, northern New England winters have receded by 1 or 2 weeks in length over the last 30 years.

The list of what is happening goes on and on.

The chair of the Climate Research Committee of the National Academy of Sciences stated very clearly during an October 1, 2003, hearing before the Commerce Committee: The planet has a fever, and it is time to be taking action.

I caution my colleague from Oklahoma about statements that he attributes to certain members of the scientific community. Specifically, I am referring to two scientists that he referred to before, Dr. Wigley and Dr. Schneider. Dr. Wigley has written to Senators FRIST and DASCHLE about the misrepresentation of his work by Senator INHOFE. He writes a long letter: Senator INHOFE urges that Congress should put stock in scientists who rely on the most objective scientific data. He characterizes me as someone whose credentials cannot be trusted.

Mr. INHOFE. May I interrupt for a question?

Mr. MCCAIN. Yes, but not to take my time.

Mr. INHOFE. I do not believe I mentioned Dr. Wigley in my remarks. It must have been somebody else.

Mr. MCCAIN. Pardon me?

Mr. INHOFE. I do not believe I mentioned Dr. Wigley in my remarks.

Mr. MCCAIN. Dr. Wigley was mentioned by the Senator in his statement on the floor.

He goes through several misrepresentations. Perhaps the most serious one, and this is a quote from his letter: the third representation made by Senator INHOFE concerns the observed record of global mean temperature changes over the past 100 years. This data show a warming to about 1940, little change from 1940 to the mid-1970s, and then further warming. Senator INHOFE implies that these changes are inconsistent with the global warming hypothesis and with climate models. This is categorically incorrect. In order to understand these observed changes, it is necessary to consider all likely causal factors, both human-induced and natural. Human-induced factors include the warming effects of greenhouse gases and the cooling effects of sulfate aerosols. Natural factors in-

clude changes in the output of the sun, effects of explosive volcanic eruptions like Mount Pinatubo in 1991. When all these factors are considered, models give an expected pattern of 20th century temperature changes that is in remarkable agreement with the observations, and the models clearly show the three phases as noted above, in particular the leveling off, the warming trend over 1940 to 1975, turns out to be explained largely by the cooling effects of sulfate aerosols, temporarily offsetting the warming due to increasing concentration of greenhouse gases, something which was first pointed out in the paper of mine published in *Nature* in 1989, which has been clearly stated in a subsequent IPCC report. This remarkable agreement shows quite clearly that human factors have been the dominant cause of global scale climate change over the past 50 years, contrary to the assertion by Senator INHOFE that all observed changes are merely manifestations of natural variability.

For his part, Dr. Schneider had the following to say about Senator INHOFE's statement: It is misrepresenting my views to characterize them as even implying that IPCC is exaggerated or failed to describe the state of the science fairly at the time the assessment reports were completed in the year 2000.

So Dr. Wigley and Dr. Schneider take some exception to how their views were characterized on the floor of the Senate.

I want to point out again that the 17,000, or whoever they were, scientists or those who claimed to be scientists—and there are some interesting signatures to that—were in opposition to the United States signing the Kyoto Treaty.

I know that my colleague, the Senator from Connecticut, would like to say a few words, but I again want to read a letter from 1,010 preeminent scientists who write:

DEAR SENATORS FRIST AND DASCHLE: Two years have elapsed since the publication of the reports by the Intergovernmental Panel on Climate Change and the National Research Council on the state of the science of climate change and its impacts on the United States and the rest of the world. As scientists engaged in research on these subjects, we are writing to confirm that the main findings of these documents continue to represent the consensus opinion of the scientific community. Indeed, these findings have been reinforced rather than weakened by research reported since the documents were released. In brief—

And he goes through a number of aspects of it.

I ask unanimous consent that it be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

THE STATE OF CLIMATE SCIENCE: JULY 2003—
A LETTER FROM U.S. SCIENTISTS
JULY 29, 2003.

U.S. SENATE,
Washington, DC.

DEAR SENATORS FRIST AND DASCHLE: Two years have elapsed since the publication of

the most recent reports by the Intergovernmental Panel on Climate Change (IPCC) and the National Research Council (NRC) on the state of the science of climate change and its impacts on the United States and the rest of the world. As scientists engaged in research on these subjects, we are writing to confirm that the main findings of these documents continue to represent the consensus opinion of the scientific community. Indeed, these findings have been reinforced rather than weakened by research reported since the documents were released.

In brief, the findings are that:

(1) Anthropogenic climate change, driven by emissions of greenhouse gases, is already underway and likely responsible for most of the observed warming over the last 50 years—the largest warming that has occurred in the Northern Hemisphere during at least the past 1,000 years;

(2) Over the course of this century the Earth is expected to warm an additional 2.5 to 10.5°F, depending on future emissions levels and on the climate sensitivity—a sustained global rate of change exceeding any in the last 10,000 years;

(3) Temperature increases in most areas of the United States are expected to be considerably higher than these global means because of our nation's northerly location and large average distance from the oceans;

(4) Even under mid-range emissions assumptions, the projected warming could cause substantial impacts in different regions of the U.S., including an increased likelihood of heavy and extreme precipitation events, exacerbated drought, and sea level rise;

(5) Almost all plausible emissions scenarios result in projected temperatures that continue to increase well beyond the end of this century; and,

(6) Due to the long lifetimes of greenhouse gases in the atmosphere, the longer emissions increase, the faster they will ultimately have to be decreased in order to avoid dangerous interference with the climate system.

Evidence that climate change is already underway includes the instrumental record, which shows a surface temperature rise of approximately 1°F over the 20th century, the accelerated sea level rise during that century relative to the last few thousand years, global retreat of mountain glaciers, reduction in snow cover extent, earlier thawing of lake and river ice, the increase in upper air water vapor over most regions in the past several decades, and the 0.09°F warming of the world's deep oceans since the 1950's.

Evidence that the warmth of the Northern Hemisphere during the second half of the last century was unprecedented in the last 1000 years comes from three major reconstructions of past surface temperatures, which used indicators such as tree rings, corals, ice cores, and lake sediments for years prior to 1860, and instrumental records for the interval between 1865 and the present.

On the subject of human causation of this warmth, the NRC report stated that, "The IPCC's conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects the current thinking of the scientific community on this issue." Indeed, computer simulations do not reproduce the late 20th century warmth if they include only natural climate forcing such as emissions from volcanoes and solar activity. The warmth is only captured when the simulations include forcings from human-emitted greenhouse gases present in the atmosphere.

In summary, the main conclusions of the IPCC and NRC reports remain robust consensus positions supported by the vast majority of researchers in the fields of climate

change and its impacts. The body of research carried out since the reports were issued tends to strengthen their conclusions.

Sincerely,

Richard J. Abitz, Ph.D., Director, Fluor Fernald, Inc., Cincinnati, OH.

Vincent J. Abreu, Ph.D., Research Scientist, University of Michigan, Department of Atmospheric, Oceanic, and Space Sciences, Ann Arbor, MI.

Ilse Ackerman, M.S., Doctoral Candidate, Cornell University, Department of Crop and Soil Sciences, Ithaca, NY.

Leslie M. Adams, Ph.D., University of New Hampshire, Department of Plant Biology, Durham, NH.

Steven M. Adler-Golden, Ph.D., Principal Scientist, Spectral Sciences, Inc., Burlington, MA.

David D. Ainley, Ph.D., Senior Ecologist, Harvey and Associates, San Jose, CA.

Neela Malati Akhouri, Ph.D., Information Manager, University of Toledo, Lake Erie Center, Oregon, OH.

Becky Alexander, Ph.D., Post-Doctoral Fellow, Harvard University, Department of Earth and Planetary Sciences, Cambridge, MA.

J. David Allan, Ph.D., Professor, University of Michigan, School of Natural Resources and Environment, Ann Arbor, MI.

Mr. MCCAIN. The letter further states:

Over the course of this century, the Earth is expected to warm an additional 2.5 to 10.5 degrees Fahrenheit, depending on future emissions levels and on the climate sensitivity—a sustained global rate of change exceeding any in the last 10,000 years.

Temperature increases in most areas of the United States are expected to be considerably higher than these global means because of our nation's northerly location and large average distance from the oceans.

Almost all plausible emissions scenarios result in projected temperatures that continue to increase well beyond the end of this century, and

Due to the long lifetimes of greenhouse gases in the atmosphere—

Those are the ones that cause no harm in the view of the opponents of this legislation.

the longer emissions increase, the faster they will ultimately have to be decreased in order to avoid dangerous interference with the climate system.

Evidence that climate change is already underway includes the instrumental record, which shows a surface temperature rise of approximately 1 degree Fahrenheit over the 20th century, the accelerated sea level rise during that century relative to the last few thousand years, global retreat of mountain glaciers, reduction in snow cover extent, earlier thawing of lake and river ice, the increase in upper air water vapor over most regions in the past several decades, and the 0.09 Fahrenheit warming of the world's deep oceans since the 1950s.

Evidence that the warmth of the Northern Hemisphere during the second half of the last century was unprecedented in the last 1,000 years comes from three major reconstructions of past surface temperatures, which used indicators such as tree rings, corals, ice cores, and lake sediments for years prior to 1860, and instrumental records for the interval between 1865 and the present.

On the subject of human causation of this warmth, the NRC report stated that the IPCC's conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects the current thinking of the scientific community on this issue.

What the Senator from Connecticut and I are doing is an incredibly modest proposal to try to at least stop the increase of greenhouse gases. The overwhelming majority of the scientific community in the United States of America agrees that climate change is taking place. How serious that is, how significant it is, and how longlasting its effect could be the subject of significant debate and discussion.

But the fact is that the loss of jobs, which I do not believe is accurate, is an issue that needs to be addressed. But what about the loss of our environment? What happens if the coral reefs die? What happens if the Arctic icecap melts? What happens if we continue to see increased temperatures?

I don't know all the answers as to what happens. I leave that in the hands of people who are smarter than I am. But if this picture doesn't concern you, then nothing will. I hope we will be able to pass this legislation as a very modest and a very humble beginning to addressing the issue of climate change.

I assure my colleagues of one thing. I will talk about this again tomorrow. We will be back on this issue, just as we were back on the issue of campaign finance reform. We will be back on it because this is not stopping. This is not stopping. More and more evidence will be accumulated and more and more people will become concerned because we love this great country of ours and we love this world and we do not want to see it destroyed.

The overwhelming body of scientific evidence indicates we are placing our globe in jeopardy and the lives and futures of our children and our grandchildren. We may have lived in a very nice time in the history of the world. Our children and grandchildren may be condemned to a much less happy world.

I reserve the remainder of my time.

The PRESIDING OFFICER. Who yields time?

Mr. MCCAIN. As sponsors of the amendment, traditionally, we speak last.

Mr. LIEBERMAN. Would the Chair advise us how much time remains?

The PRESIDING OFFICER. There remain 23 seconds for the proponents of the measure and 3 minutes 23 seconds for the Senator from Oklahoma.

Mr. INHOFE. Since it was called to our attention that tradition would have it you wrap up, you may have the last 23 seconds. Let me say to my good friend from Arizona—and he is a good friend—you can talk about these people. He talked about 1,010 scientists. I talked about over 20,000 scientists who have agreed with this, looked at this, and said it doesn't really exist. I have talked about sources that cannot be impugned by anyone. I am talking about the Smithsonian, Harvard, Standard & Poor's, and others.

Let me just mention I have saved, I think, the best for last because, yes, we are concerned about jobs. That is the biggest concern we have in America now. Wharton Econometric Fore-

casting Associates came out with something that delineated exactly the damage that would be done to America and that it would cost 2.4 million U.S. jobs. That is why the labor unions are involved in this. It would reduce GDP by 3.2 percent, or about \$300 billion, which is more than we spend on primary and secondary education combined.

They said because of Kyoto, American consumers would face higher medical, food, and housing costs. Tomorrow I will delineate exactly how much that is. At the same time, an average household of four would see its real income drop by \$2,700 by 2010, and each year thereafter.

They go on to say—this is the Wharton School of Economics:

Under Kyoto, energy and electricity prices would nearly double and gasoline prices would go up an additional 65 cents a gallon.

I know I am almost out of time. Since it was brought up by the distinguished Senator from Connecticut about the farmers, let me tell you who is frantically trying to stop us from destroying the American farmer: the International Dairy Foods Association, the National Association of Wheat Growers, National Cattle and Beef Association, National Food Processors Association, National Grange, the National Oilseed Producers, the American Farm Bureau, the National Corn Growers Association. The list goes on and on, because these people are very much concerned about the competitive disadvantage in which they would find themselves.

I would also have to say I invite my very good friend from Arizona to go back and search the record of my remarks, the 40-minute talk I made a few minutes ago. Nowhere in that talk are the two names—what were they, Wigley and Schneider?—who were mentioned during that time. Tomorrow there will be ample opportunity to address that issue.

We are talking about a big deal. You wonder what the motivation is? I will quote a couple of people. If the science is not real, if it inflicts all this damage on America, then what could possibly be the motivation? I think maybe Jacques Chirac, the President of France, the other day was correct when he said, "Kyoto is not about climate. It is the first component of an authentic global governance."

Do we really want to have France dictating policies to us?

Mr. MCCAIN. I ask unanimous consent that the Senator from Oklahoma have an additional 3 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. INHOFE. Let me just say I will yield the remainder of my time. I think it would be only fair if I get an additional 3 minutes, that they get an additional 3 minutes, too, and I don't want that to happen.

The PRESIDING OFFICER. The Senator from Arizona.

Mr. MCCAIN. Mr. President, I wish to express my appreciation to all who

have engaged in this debate tonight. I wish we had more time. This press of end-of-year business prevents us from doing so. We will be revisiting this issue. I congratulate the Senator from Oklahoma for an articulate presentation of his views. I look forward to our additional 2 hours together tomorrow.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. MCCAIN. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. MCCAIN. I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

MORNING BUSINESS

Mr. MCCAIN. Mr. President, I ask that there now be a period of morning business, with Senators permitted to speak for up to 10 minutes each.

The PRESIDING OFFICER. Without objection, it is so ordered.

LOCAL LAW ENFORCEMENT ACT OF 2003

Mr. SMITH. Mr. President, I speak about the need for hate crimes legislation. On May 1, 2003, Senator KENNEDY and I introduced the Local Law Enforcement Enhancement Act, a bill that would add new categories to current hate crimes law, sending a signal that violence of any kind is unacceptable in our society.

I describe a sad and reprehensible display of intimidation that took place in Peoria, IL, on July 6, 2001. That day, Forest Hatley and Charles Lambert decided to burn a cross at a home in Macomb, IL, where an interracial couple lived. The two men constructed a 7-foot by 3-foot cross and doused it with gasoline. Shortly after midnight, the two men transported the cross to the victims' yard, planted it in front of the home, and ignited it. Lambert and Hatley each admitted this action was taken to intimidate the couple because of the male's race and because he was living with a person of another race.

I believe that Government's first duty is to defend its citizens, to defend them against the harms that come out of hate. The Local Law Enforcement Enhancement Act is a symbol that can become substance. By passing this legislation and changing current law, we can change hearts and minds as well.

NOMINATION FOR THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

Mr. KENNEDY. Mr. President, the nomination of Naomi Churchill-Earp to be a member of the Equal Employment Opportunity Commission in the De-

partment of Labor was approved today by the Health, Education, Labor, and Pensions Committee, despite concerns about her ability to fairly apply employment laws.

Many of us in the committee have strong reservations about her record. A Commissioner of the EEOC must have a record of conduct that supports and promotes equality in the workplace. Ms. Churchill-Earp has served as an equal employment manager at a number of Federal agencies and while serving in these positions, a number of discrimination complaints have been filed against her. African Americans, in particular, say that she has created a hostile working environment by making disparaging remarks about African-American employees. The NAACP and Blacks in Government oppose her nomination, and many of us share their concerns.

The committee did not hold a hearing on this important nomination, and we did not have the opportunity to question her about her qualifications and positions. Unless we have an opportunity to resolve these concerns, I intend to oppose this nomination when it reaches the full Senate.

NOMINATION FOR COMMISSIONER OF EDUCATION STATISTICS

Mr. KENNEDY. Mr. President, the nomination of Robert Lerner to be Commissioner of Education Statistics in the Department of Education was approved today by the Health, Education, Labor and Pensions Committee despite concerns about this nominee's qualifications.

The Commissioner of Statistics must conduct the activities of that office in a manner that is "objective, secular, neutral and non-ideological" and "free of partisan political influence and racial, cultural, general or regional bias." The Commissioner must also have "substantial knowledge" of the programs assisted by the National Center for Education Statistics.

Many of us feel that Dr. Lerner does not meet these requirements. He has clearly been an advocate for partisan ideological causes, and his advocacy does not seem to be compatible with a non-partisan role as Commissioner. His published writings raise questions about his ability to set aside his ideological views in dealing with statistical analysis.

Previous nominees for this important position have come from academic backgrounds and with experience in dealing with statistical analysis. Dr. Lerner has no such experience or academic background.

The Committee did not have a hearing on this important nomination and we did not have the opportunity to question Dr. Lerner regarding his qualifications and past advocacy. Unless we have an opportunity to resolve these concerns, I intend to oppose this nomination when it reaches the full Senate.

NATIONAL CEMETERY EXPANSION ACT OF 2003

Mr. GRAHAM of Florida. Mr. President, today the House passed important legislation that has already unanimously passed the Senate and authorizes the construction of six new national veterans cemeteries. By passing this bill, we ensure that America's veterans and their families have access to the burial honors they have earned.

The brave men and women who fought for our nation are a population that is aging rapidly. In 2002, America lost 646,264 veterans. Projections show that this rate will continue to climb through the year 2008, when we are expected to lose over 700,000 veterans.

By the end of 2004, only 64 of the 124 veterans national cemeteries will be available for both casketed and cremated remains. As cemetery service capabilities decrease, veterans in areas near cemeteries that are at capacity will lose access to burial options within a reasonable distance of their homes. In order to ensure that burial options are provided for veterans and their family members, we must develop new cemeteries and expand existing cemeteries. This process must start as soon as possible because the construction of a new cemetery takes an average of seven years.

In anticipation of veterans' future needs, the Department of Veterans Affairs conducted a study that identifies veteran population centers not served by an open national or state veterans cemetery. The report, "Future Burial Needs," was initially released in May 2002 and has been recently revised using veteran population estimates from the 2000 census. The report identified 31 locations as areas where cemeteries would need to be established.

Recognizing that it would not be practicable to establish national cemeteries in all 31 locations, especially in areas where state cemeteries could meet the needs of smaller veterans' populations, VA established guidelines to determine the neediest areas. In locations that had more than 170,000 veterans residing more than 75 miles from an open state or national cemetery, VA would establish or expand national cemeteries. Based on revised population estimates and the new guidelines, VA identified 11 locations that required either a new national cemetery or an expansion of an existing national cemetery. Of these locations, five will be served by an already-planned state cemetery funded through VA's State Cemetery Grants Program or by expanding existing national cemeteries. This bill directs the Department of Veterans Affairs to construct veterans cemeteries six cities: Jacksonville, Florida; Sarasota, Florida; Birmingham, Alabama; Bakersfield, California; Philadelphia, Pennsylvania; and Columbia, South Carolina.

We cannot afford to wait any longer to fulfill this commitment to our nation's veterans. Mr. President, I am